SONY

COMPACT CONFERENCE PACKAGE

PCS-1600
PCS-1600P

COMPACT PROCESSOR

PCS-P160/P160P

REMOTE COMMANDER

PCS-R160

AC ADAPTOR

PCS-AC15

BRI BOARD

PCS-I160

V.35 BOARD

PCS-I161

SONY UPGRADE KIT

PCS-UC160/UC161

SERVICE MANUAL

Volume 1 1st Edition

MEMORY STICK TM

⚠警告

このマニュアルは，サービス専用です。
お客様が，このマニュアルに記載された設置や保守，点検，修理などを行うと感電や火災，人身事故につながることがあります。
危険をさけるため，サービストレーニングを受けた技術者のみご使用ください。

⚠WARNING

This manual is intended for qualified service personnel only.
To reduce the risk of electric shock, fire or injury, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

⚠WARNUNG

Die Anleitung ist nur für qualifiziertes Fachpersonal bestimmt.
Alle Wartungsarbeiten dürfen nur von qualifiziertem Fachpersonal ausgeführt werden. Um die Gefahr eines elektrischen Schlages, Feuergefahr und Verletzungen zu vermeiden, sind bei Wartungsarbeiten strikt die Angaben in der Anleitung zu befolgen. Andere als die angegeben Wartungsarbeiten dürfen nur von Personen ausgeführt werden, die eine spezielle Befähigung dazu besitzen.

⚠ AVERTISSEMENT

Ce manual est destiné uniquement aux personnes compétentes en charge de l’entretien. Afin de réduire les risques de décharge électrique, d’incendie ou de blessure n’effectuer que les réparations indiquées dans le mode d’emploi à moins d’être qualifié pour en effectuer d’autres. Pour toute réparation faire appel à une personne compétente uniquement.

CAUTION

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer.
Dispose of used batteries according to the manufacturer's instructions.

ADVARSEL

Lithiumbatteri - Eksplosjonsfare.
Ved utskifting benyttes kun batteri som anbefalt av apparatfabrikanten.
Brukt batteri returneres apparatleverandøren.

Vorsicht!

Explosionsgefahr bei unsachgemäßem Austausch der Batterie.

Ersatz nur durch denselben oder einen vom Hersteller empfohlenen ähnlichen Typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

VARNING

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en likvärdig typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt gällande föreskrifter.

ATTENTION

Il y a danger d'explosion s'il y a remplacement incorrect de la batterie.

Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur.
Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

VAROITUS

Paristo voi räjähtää jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin.
Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

ADVARSEL!

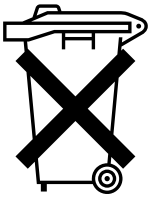
Lithiumbatteri-Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

For the customers in the Netherlands
Voor de klanten in Nederland

Dit apparaat bevat een MnO_2-Li batterij voor memory back-up.

Raadpleeg uw leverancier over de verwijdering van de batterij op het moment dat u het apparaat bij einde levensduur afdankt.

Gooi de batterij niet weg. maar lever hem in als KCA.



Bij dit produkt zijn batterijen geleverd. Wanneer deze leeg zijn, moet u ze niet weggooien maar inleveren als KCA.

Für Kunden in Deutschland

Entsorgungshinweis: Bitte werfen Sie nur entladene Batterien in die Sammelboxen beim Handel oder den Kommunen. Entladen sind Batterien in der Regel dann, wenn das Gerät abschaltet und signalisiert “Batterie leer” oder nach längerer Gebrauchsdauer der Batterien “nicht mehr einwandfrei funktioniert”. Um sicherzugehen, kleben Sie die Batteriepole z.B. mit einem Klebestreifen ab oder geben Sie die Batterien einzeln in einen Plastikbeutel.

http://getMANUAL.com

Table of Contents

Manual Structure

Purpose of this manual 3
Related manuals 3
Contents 3

1. Operating Instructions

2. Service Overview

2-1. System Configuration 2-1
2-2. List of Required Measuring Equipment and Tools 2-2
2-3. Board Layout Diagram 2-2
2-4. Removing the Cabinets 2-3
2-4-1. Upper Cabinet 2-3
2-4-2. Lower Cabinet 2-4
2-5. Replacing the Main Parts 2-5
2-5-1. Speaker 2-5
2-5-2. Microphone 2-6
2-5-3. Optional Boards 2-7
2-5-4. RX-47A Board 2-8
2-5-5. IPM-92A Board 2-8
2-5-6. IPM-93A Board 2-9
2-5-7. DE-55 Board 2-9
2-5-8. CN-2143 Board 2-10
2-5-9. EX-816 Board 2-10
2-5-10. MA-107/107P Board 2-11
2-5-11. Flexible Card Wire 2-12
2-6. Notes on Repair Parts 2-12
2-6-1. Notes on Repair Parts 2-12

3. Operating Descriptions

3-1. Overall Function 3-1
3-1-1. Interface between Devices 3-1
3-1-2. Function of Compact Processor (PCS-P160/P160P) 3-2
3-1-3. Function of Respective Boards 3-3
3-2. Circuit Description of the Respective Boards 3-6
3-2-1. Overall Function of MA-107/107P Board 3-6

3-2-2. Overall Function of IPM-92A and IPM-93A Boards (Infrared IR Receiver Board) 3-35
3-2-3. Overall Function of DE-55 Board (FM Demodulator Board) . 3-35
3-2-4. Overall Function of RX-47A Board 3-35
3-2-5. Overall Function of IF-823 Board 3-37
3-2-6. Overall Function of IF-824 Board 3-39
3-3. Signal Flow of Communication Data 3-41

4. Troubleshooting

4-1. Check Items Before Starting Self-diagnostics 4-1
4-2. Self-diagnostics Function 4-23
4-2-1. About Self-diagnostics Function 4-23
4-2-2. Diagnostics on Each Block 4-29
4-2-3. When Self-diagnostics Results in FAIL 4-44

Manual Structure

Purpose of this manual

This is the Service Manual for the Compact Conference Package PCS-1600/1600P. The manual contains servicing information regarding parts replacement, circuit operations, troubleshooting, and command list.

Related manuals

In addition to this Service Manual Vol. 1 (9-968-588-11), the following manuals are provided.

- **Operation Manual (supplied with PCS-1600/1600P)**
  Part No. : 3-205-055-11, 3-205-055-21
  Part of the Operation Manual is included also in this Service Manual, in Section 1, "Operating Instructions."

- **Service Manual Vol. 2**
  Part No. : 9-968-588-21
  Contains the semiconductor pin assignments, parts list, exploded views, schematic diagrams and board layouts.

Contents

The following is a summary of all the sections for understanding the contents of this manual.

Section 1 Operating Instructions

This section describes the contents of the operating instructions.

Section 2 Service Overview

This section describes the system configuration, external panel removal procedures during servicing, layouts of the main parts and boards, board removal procedures, notes and so on.

Section 3 Circuit Descriptions

Illustrates the block diagrams which show each board function and signal flow, and describes outlines of the circuits.

Section 4 Troubleshooting

This section describes the information related to when the system experiences a problem.

Section 5 On Screen Messages

In some cases messages appear on the monitor display when operating the compact processor. This section lists the messages that can be checked on the monitor display.

Section 6 PCS-UC160

This section describes how to install and repair the PCS-UC160.

SONY

3-205-055-**11**(1)

Compact Conference Package

Operating Instructions

Before operating the unit, please read this manual thoroughly and retain it for future reference.

PCS-1600/1600P

MEMORY STICK ™

© 2000 Sony Corporation

Section 1
Operating Instructions

Reprinted from the operating instructions

Owner's Record

The model and the serial numbers are located at the bottom. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. PCS-1600/1600P
Serial No. _____

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

For the customers in the USA

This device complies with Part 15 of the FCC Rules.
Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a computing device pursuant to Subpart B of Part 15 of FCC Rules.

IMPORTANT INSTRUCTION TO USERS

1. This equipment complies with Part 68 of the FCC Rules. On the bottom of this equipment is a label that contains, among other information, the FCC registration number for this equipment. If requested, this information must be provided to the telephone company.

2. If this terminal equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

3. The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

4. If trouble is experienced with this equipment for repair or warranty information, please contact Sony Business Information Center ☎ 1-800-686-7669. If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect this equipment until the problem is resolved.

5. This equipment cannot be used on public coin phone service provided by the telephone company. Connection to party line service is subject to state tariffs.

For the Customers in EU countries

CE

Hereby, Sony Corporation, declares that this PCS-P160P is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
The PCS-P160P is intended to be connected to the ISDN using basic rate access interface in accordance with CTR 3 protocol.

This manual focuses on using ISDN lines to conduct a videoconference, but it also covers non-ISDN lines. If you use ISDN lines, consult your Sony dealer for more information.
• The ISDN service may not be available in some areas.

Voor de klanten in Nederland

Bij dit product zijn batterijen geleverd. Wanneer deze leeg zijn, moet u ze niet weggooien maar inleveren als KCA.

For the customers in Canada

This Class A digital apparatus complies with Canadian ICES-003.

NOTICE: The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document (s). The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

Caution: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

Table of Contents

Precautions 9

Chapter 1

Preparation

Features 11
System Configuration 13
Basic System Equipment 13
Options 14
Basic System Connection 16
Preparing the System 17
Inserting Batteries into the Remote Commander 17
Preparing the TV Monitor 18
Setting the Initial Volume Level on the TV 19
Installing the Compact Processor 20
Turning the System On/Off 21
Turning On 21
When the Compact Processor is turned on for the first time 22
Setting the System (Compact Conference Package) to be on Standby 26
On the Help Menu 27
On the Version And Option Indications 27
Turning Off 28
How to Operate the Menu 29
Switching the Menu Not in Communication 29
Switching the Menu in Communication 30
Operating the Menu 32
Turning Off the Indicators 33
Entering Characters 33

Chapter 2

Basic Operation During a Meeting

Calling a Remote Party 35
Calling an Unregistered Remote Party 36
Calling a Registered Remote Party 39
Receiving a Call 42
Setting the Answer Mode 42
Answering Calls in Auto Answer Mode 42

Table of Contents

Answering Calls in Manual Answer Mode 43
Checking the Connection Status 45
Adjusting the Sound 47
Adjusting the Volume 47
Muting Local Conversations – Mute Function 47
Synchronizing Voice and Motion – Lip Synchronization 47
On the Echo canceler 48
Adjusting the Camera 49
Adjusting the Camera Angle and Zoom 50
Adjusting Focus and Brightness 51
Presetting Angle and Zoom Settings 52
Tracking a Subject Automatically — Automatic Target Tracking Function 54
Selecting the Picture and Sound 56
Monitoring Yourself in the Inset Window 57
Displaying a Still Picture 58
Displaying a Still Picture Stored in the "Memory Stick" 58
Notes on a "Memory Stick" 59
Clearing the Still Picture From the Screen 60
Sending Still Pictures 61
Sending One Still Picture 61
Sending Still Pictures Continuously 62
Sending a Still Picture Stored in the "Memory Stick" 62
Clearing the Still Picture From the Screen 63
Saving a Still Picture Into the "Memory Stick" 64
Sending the Dial Tone to the Remote Party 65
Ending a Meeting 66

Chapter 3

Advanced Operation

Connecting With an MCU 67
Voice Meeting 70

Chapter 4

Registration and Setup

Registering a Remote Party 71
Making an Entry 72
Modifying an Entry 75
Deleting Registered Entries 76
Duplicating the Setting of the Phone Book Menu 76
Notes on Registration 77
Registering Local Information 78
Setting Up the ISDN Setup Menu 78
SPID Registration for Customers in the USA 81
Menu Items in the Setup Menu 89
Dial Setup Menu 89
Answer Setup Menu 94
MCU Setup Menu 96
Audio Setup Menu 97
General Setup Menu 98
Administrator Setup Menu 100
ISDN Setup Menu 101
LAN Setup Menu 101
Machine Information Menu 104

Chapter 5

Meetings With Optional Equipment

Installing the Optional Board 105
Using Three ISDN Lines 106
Using the V.35 Interface 106
Upgrading the Software 107
Connection using a LAN 108
Using Dual Monitors 109
Using Optional Microphones 110
Recording the Meeting Audio 111
Using the External Equipment 112
Connecting External Video Equipment for Input 112
Connecting External Equipment for Output 113
Holding a T.120 Data Conference 114
Connecting With a PC 114
Setting Up the Compact Processor 115
Connecting with NetMeeting 116

Table of Contents

Chapter 6

Meetings With the Upgrade Kit

Features 117
Starting a Point to Multi-Point Meeting 118
Calling Remote Parties 118
Receiving Calls 119
Notes on Point to Multi-Point Meetings 120
Operating Chair Controls 121
Switching the Broadcast Mode 121
Selecting the Picture to be Broadcast 122
Verifying the Picture Shot by the Local Camera 123
Receiving the Broadcast Request 123
Ending a Point to Multi-Point Meeting 124
Notes on Secondary Terminals 125
The Attribute 127

Appendix

Location and Function of Parts and Controls 129
On Screen Messages 137
Troubleshooting 140
Specifications 142
Videomeeting Room Layout 149
Camera Range 149
Glossary 152

Precautions

On Safety

Power supply

- Before operating the Compact Conference Package, make sure the operating voltage of the unit is identical with that of your local power supply. The Remote Commander operates on two size AA (R6) alkaline batteries.
- Do not unnaturally bend or crimp the power cord, and do not place heavy objects on it. Damage to the cord may result in fire or electric shock.
- To remove the power cord from an AC outlet, pull out the plug. (Do not pull out the cord itself.)

Do not disassemble the system

Do not open or disassemble the cabinets of the system. Electric shock may result if you touch the inside of the cabinets.

Do not put foreign objects into the system

Avoid having metallic or flammable object, liquid, or foreign matters fall into the cabinets of the system. Otherwise a malfunction may result.

In case of trouble

In case of trouble such as smoke, odd smell, or noise, turn off all units of the system. Disconnect all the power cords and connecting cords. Then contact the place of purchase or an authorized Sony representative.

ISDN

Never install telephone wiring during a lightning storm.
Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
Use caution when installing or modifying telephone lines.
Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
Do not use the telephone to report a gas leak in the vicinity of the leak.

Precautions

On Handling

Installation/storage

Do not expose the system to:
- Extremely low or high temperatures.
- Damp or dusty room.
- Strong vibration.
- Near devices which generate strong magnetic fields.
- Near devices (such as radios) which transmit strong radio wave.
- Noisy place.

Cleaning

Wipe the cabinets and panels with a dry and soft cloth. If the stain is serious, slightly moisten the cloth with mild detergent. Afterward, use a dry cloth to wipe it. Do not use solvents such as thinner, benzine, alcohol, as they may damage the finish of the cabinets.

Chapter 1

Preparation

Features

The PCS-1600/1600P Compact Conference Package can connect a remote party via an ISDN (Integrated Services Digital Network) line[1)]. It sends and receives images and sound, allowing you to have virtual face-to-face meetings with people in other cities or countries.
The system accommodates up to three participants in one location. However, you can add the optional PCS-A300 Microphones for additional participants.
If you upgrade the Compact Conference Package using the PCS-UC160 Upgrade Kit and PCS-I160 BRI Board, you can use the Compact Conference Package as the MCU (Multipoint Control Unit) to hold a point to multi-point meeting among four terminals.

1) You can install an optional interface board for connection with V.35 interface or with 6B channels. And if you upgrade the Compact Conference Package using the PCS-UC161 Upgrade Kit, you can connect a remote party via a LAN.

International standards

The PCS-1600/1600P Compact Conference Package complies with ITU-T Recommendations, for easy connection with remote parties overseas. (ITU-T Recommendations have been defined by WTSC (former CCITT).)
WTSC: World Telecommunications Standardization Committee
ITU: International Telecommunication Union

http://getMANUAL.com

Features

Light weight and small size

The Compact Processor has come to miniaturized to 2.5 kg (5 lb 8 oz) of mass, and it has a small size (258 × 55 × 206 mm; 10 1/4 × 2 1/4 × 8 1/8 inches), you can easily install the Compact Processor on your TV monitor.

Simple setup

The Compact Conference Package has the integral-type camera and microphone. You do not have to do a complicated connection; simply connect the TV monitor and the ISDN modular cable.

Help menu and setup wizard

The Help menu appears on the monitor screen for guidance, by pressing the HELP button. When you turn on the Compact Processor for the first time, the setup wizard appears on the monitor screen. Set up the system under its guidance.

The Remote Commander can operate a Sony TV monitor

You can operate a Sony TV monitor with the Remote Commander supplied with the Compact Conference Package.

Automatic tracking function

In addition to pan/tilt action, the automatic target tracking feature allows you to track a subject having the memorized color and brightness automatically.

Echo canceler

A built-in echo canceler decreases sound echo from walls in the meeting room, allowing for clear sound reproduction.

Equipped with the Memory Stick slot

Since the Compact Processor is equipped with the Memory Stick slot, you can use still images stored in the “Memory Stick”.

Dual-monitor system

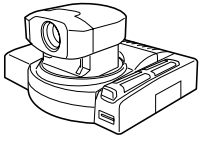
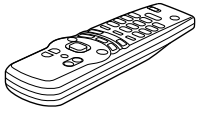
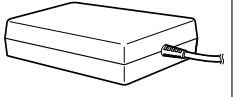
Two monitors can be used with the system, one is for moving picture and the other is for still image.

System Configuration

The PCS-1600/1600P Compact Conference Package is a basic system that can be enhanced with variety of optional equipment.

Basic System Equipment

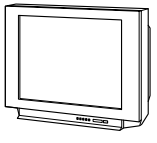
The PCS-1600/1600P Compact Conference Package forms the basis of the PCS-1600 series system.
The PCS-1600/1600P Compact Conference Package consists of the following units:

Unit	Description
PCS-P160/P160P Compact Processor PCS-C160/C160P Camera 	Contains the video codec, audio codec, echo canceler, network interfaces and system controller. This unit has an integral-type camera and microphone.
PCS-R160 Remote Commander 	Controls the Compact Processor. This can also be used to operate a Sony TV monitor.
PCS-AC15 AC adaptor 	Provides the power supply to the Compact Processor.

Options

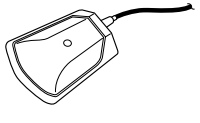
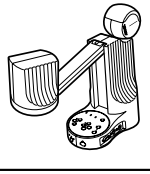
TV monitor

A TV monitor is required for your meetings.

Unit	Description
TV monitor 	A TV is used as a meeting monitor and speaker. It displays the remote party, graphics, and menus. If you use a Sony TV, you can operate it with the Remote Commander supplied with the Compact Conference Package. Two monitors are required for a dual-monitor system.

Other options

The following optional devices are also available to improve your meetings.

Unit	Description
PCS-A300 Microphone 	Allows you to accommodate extra two or three participants. You can connect two microphones. However, you cannot use both the built-in microphone and the external microphone at the same time.
PCS-DS150/DS150P Document Stand 	This document camera can transmit the video signal to the Compact Processor using infrared rays, without connecting a cable to the Compact Processor. You can easily transmit the RGB signal of a PC to the Compact Processor.

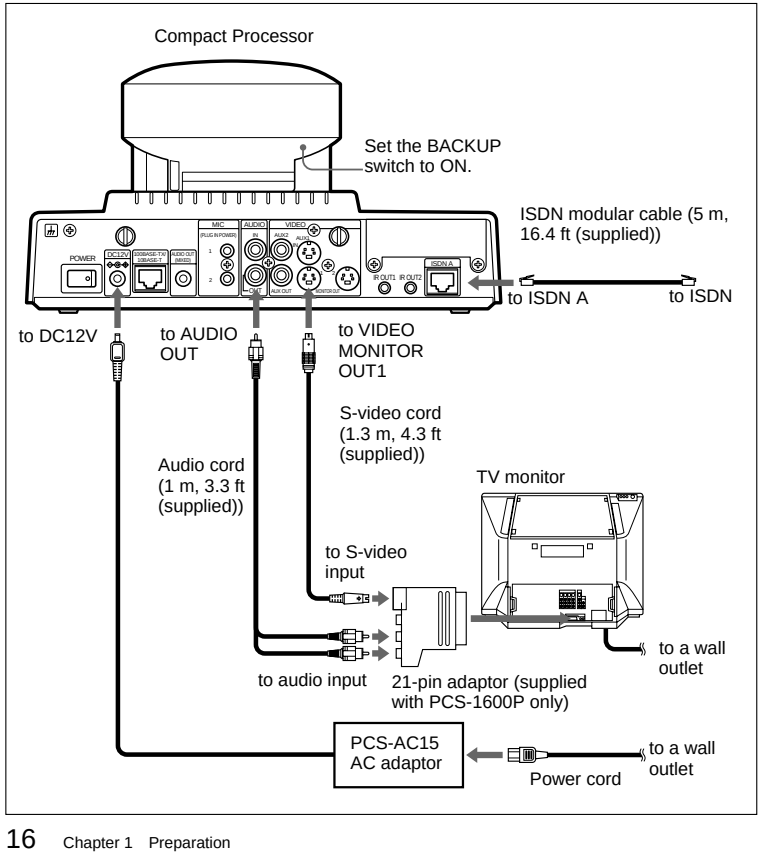
Unit	Description
PCS-I160 BRI Board	Provides two ISDN jacks. The connection with 6B channels is available.
PCS-I161 V.35 Board	Provides the V.35 connector. The connection via the V.35 interface is available.
PCS-K32 V.35 Conversion Connector Cable	Connects one end to the V.35 connector (on the PCS-I161 V.35 Board) and the other end to the terminal adaptor. (1 m, 3.3 ft)
PCS-K60 S-video cord	Connects one end to the S-video jack on the video equipment and the other end to the Compact Processor.
PCS-UC160 Upgrade Kit	Allows you to use this unit as the MCU (Multipoint Control Unit).
PCS-UC161 Upgrade Kit	Allows you to hold a meeting on the LAN that corresponds to H.323.

Basic System Connection

Connect the TV monitor and the AC adaptor to the Compact Processor, and connect to the ISDN line with the supplied ISDN modular cable.
The following cables; the ISDN modular cable and the audio cord, each cable is equipped with the color label. When connecting these cables, match the label color with the color of the connector name printed on the rear panel.

Notes

- Be sure to turn off all the equipment before making any connections.
- If your TV has the 21-pin connector, use the supplied 21-pin adaptor. (PCS-1600P only)

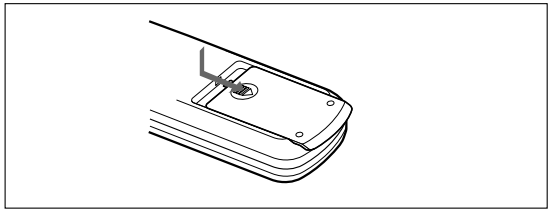


Preparing the System

Inserting Batteries into the Remote Commander

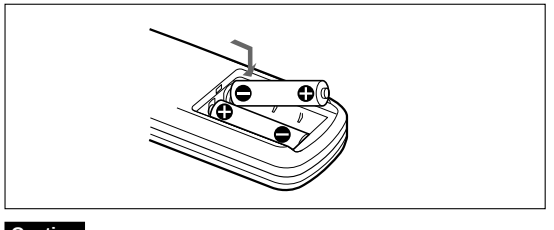
The supplied Remote Commander controls most of the functions. This section describes how to insert batteries into the Remote Commander.

1 Remove the battery compartment cover.



2 Insert two size AA (LR6) alkaline batteries (supplied) with correct ⊕ and ⊖ polarity into the battery compartment.

When inserting the batteries, be sure to put the negative end at first.



Caution

Be sure to place the negative ⊖ end of the battery at first. If you place the positive ⊕ end at first, there is a possibility of damaging the insulated film covering the battery and creating a short circuit.

3 Replace the cover.

Battery life

When the Remote Commander no longer functions properly, replace both the batteries.

Notes on batteries

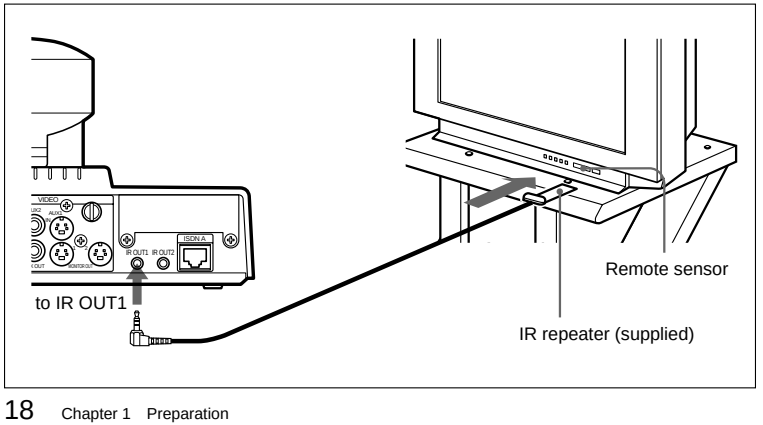
To avoid possible damage from battery leakage or corrosion, observe the following:

- Be sure to insert the batteries in the correct direction.
- Do not mix old and new batteries, or different types of batteries.
- Do not attempt to charge dry-cell batteries.
- If you do not intend to use the Remote Commander for a long time, remove the batteries.
  If battery leakage occurs, clean the battery compartment and replace all the batteries.

Preparing the TV Monitor

Insert the IR repeater below the remote sensor of the TV monitor. Once you set the IR repeater, you can turn on the Compact Processor and a Sony TV monitor together by pressing the I/⏻ button on the Remote Commander.
If the IR repeater does not function properly, set Monitor Mode in the General Setup menu to MODE2 (PCS-1600); to MODE4 (PCS-1600P).

For details on the Monitor Mode setting, see "General Setup menu" on page 98.



When using a Sony TV monitor

The TV monitor can be operated from the Remote Commander.

For details on operating the Remote Commander, see "To operate a Sony TV monitor" on page 136.

To adjust the TV monitor screen

Use the controls on the TV monitor to adjust the screen (picture, hue, contrast, brightness, and sharpness).

For details on adjusting the screen, refer to the operating instructions supplied with the TV monitor.

Note

Do not activate the surround function of the TV monitor. This causes strange sounds since the echo canceler on the Compact Processor will not function properly.

Setting the Initial Volume Level on the TV

When you adjust the volume, use the VOLUME/DOC-BRIGHT +/– buttons on the Remote Commander.

1 Set the volume level to the middle position by pressing the VOLUME/DOC-BRIGHT +/– buttons on the Remote Commander.

2 Adjust the volume with the TV monitor's control.

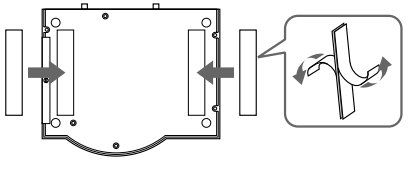
Set it to the proper level for listening to a remote party.

Preparing the System

Installing the Compact Processor

When you install the Compact Processor, use the supplied Velcro. This will prevent the Compact Processor from falling down.

1 Stick one side of the supplied Velcro to the bottom of the Compact Processor.



2 Stick the other side of the Velcro to the top of the TV monitor.

3 Attach the Compact Processor and the TV monitor by securing the Velcro.

Turning the System On/Off

This section describes how to turn on and off the Compact Processor.

Note

Set the CONF/DOC/TV selector on the Remote Commander to "CONF" when operating the Compact Processor.

Turning On

The following describes how to turn on the Compact Processor.

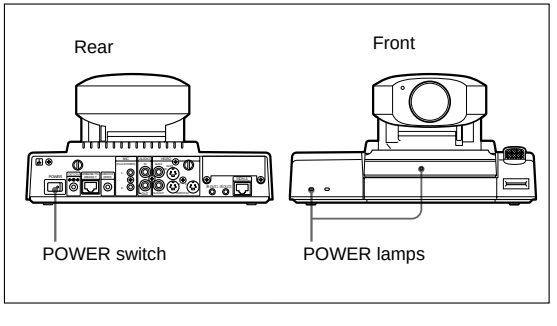
1 Make sure the TV monitor is on standby.

For details on how to set the TV monitor into a standby state, refer to the operating instructions supplied with the TV monitor.

2 Turn on the power of any other equipment to be used during the meeting.

3 Set the POWER switch on the rear of the Compact Processor to on.

Soon, the Compact Processor and the TV monitor are turned on.
The POWER lamps (green) on the camera and the Compact Processor light up, and the self-diagnostic starts. The picture shot by the local camera appears on the monitor screen after the self-diagnostic is completed.



Note

After the power is turned on, the camera performs training movements. Be sure not to catch your finger.

Sleep function

The Compact Processor is turned into sleep mode to save power, if you do not operate the Compact Processor for about 1 to 99 minutes.
The POWER lamp on the main unit flashes while in sleep mode.
Once a call comes in, the sleep function is automatically released.

To release the sleep function

Press any of the buttons on the Remote Commander.

To set the time that the unit turns into sleep mode

Set the time by setting Sleep Time in the General Setup menu. If you do not want to use the sleep function, set Sleep Mode to Off.

For details on the Sleep Time and Sleep Mode settings, see "General Setup menu" on page 98.

Notes

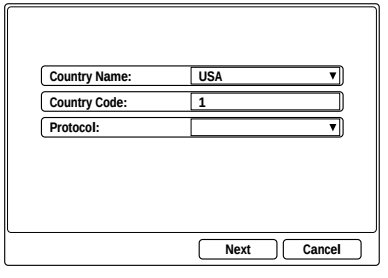
- The POWER lamp on the camera does not flash even if the system is in sleep mode.
- A Sony TV monitor is turned into standby mode.

When the Compact Processor is turned on for the first time

The setup wizard appears on the monitor screen after the self-diagnostic is completed.
Register your local system data following the wizard.

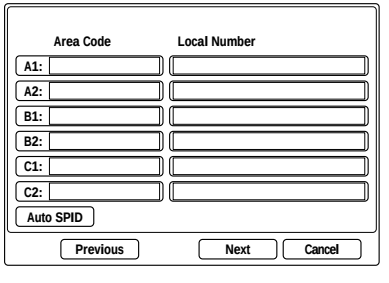
1 Set up the following items.

Country Name: Selects your country.
Country Code: Enters your country code in the box. (e.g., enter "1" for the USA.)
Protocol: Selects the nework switch type. (This is only for the USA and Canada.)



2 Select Next with the joystick on the Remote Commander, then press the joystick.

The next wizard appears on the monitor screen.



3 Set up the following items.

Area Code: Enters your area code.Do not enter the first zero number of your area code. (e.g., enter only "408" for California.)
Local Number: Enters your telephone number and sub-address (if you set your sub-address). Enter the asterisk (*) after the telephone number, then enter the sub-address. You cannot use the alphabet in a sub-address.

(Continued)

Turning the System On/Off

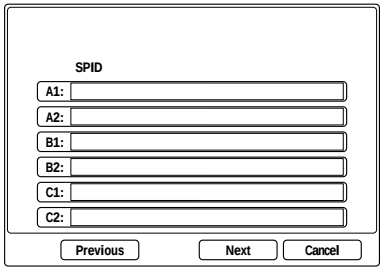
When you select Auto SPID
You can automaically set up the Area Code, Local Number on this page, and SPID items on the next page.

Notes

- "Auto SPID" is only for the USA and Canada.
- Register information in the boxes B1 to C2 if you have installed the optional PCS-I160 BRI Board.

4 Select Next with the joystick on the Remote Commander, then press the joystick.

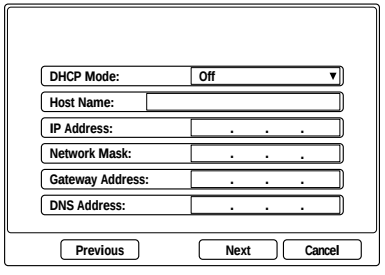
The next wizard appears on the monitor screen. (This is only for the USA and Canada.)



For details on the SPID registration, see "SPID Registration for Customers in the USA" on page 81.

5 Select Next with the joystick on the Remote Commander, then press the joystick.

The next wizard appears on the monitor screen.

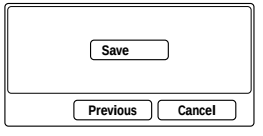


6 Set up the following items.

DHCP Mode: Sets up the DHCP (Dynamic Host Configuration Protocol).
Auto: Automatically gets your IP address and network mask. Check your IP address on the Machine Information menu after you get them.
Off: Sets DHCP to OFF. When set to OFF, enter your IP address and network mask.
Host Name: Enter your host name.
IP Address: Enter your IP address.
Network Mask: Enter your network mask.
Gateway Address: Enter your default gateway address.
DNS Address: Enter your DNS (Domain Name System) server address.

7 Select Next with the joystick on the Remote Commander, then press the joystick.

The message for verification appears.



8 Select Save with the joystick on the Remote Commander, then press the joystick.

The setting is saved.

To cancel the setup

Select Cancel with the joystick on the Remote Commander, then press the joystick. Or press the RETURN button on the Remote Commander.

To go back to the previous wizard

Select Previous with the joystick on the Remote Commander, then press the joystick.

Setting the System (Compact Conference Package) to be on Standby

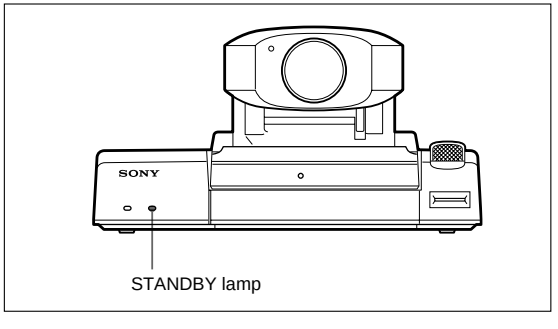
When the system is on standby, you can turn the system on with the I/⏻ button on the Remote Commander.

1 Press the I/⏻ button on the Remote Commander.

The indication “Power off?” appears on the monitor screen.

2 Select OK with the joystick on the Remote Commander, then press the joystick. Or press the I/⏻ button on the Remote Commander.

Both the Compact Processor and the TV monitor are turned into standby.
The STANDBY lamp (orange) lights up.



To cancel turning into standby
Select Cancel using the joystick on the Remote Commander in step **2**, then press the joystick.

Note
Do not turn off the POWER switch on the rear panel while the menu is displayed on the monitor screen.

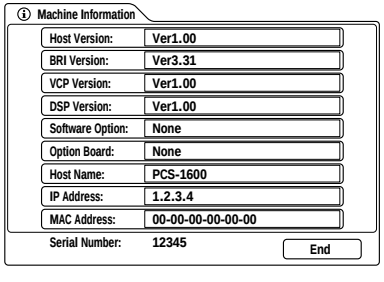
On the Help Menu

Press the HELP button on the Remote Commander, the help menu appears on the monitor screen.

On the Version And Option Indications

You can check the Compact Processor version and the option installed into the unit, with the Machine Information menu.

For details on the Machine Information menu, see “Machine Information menu” on page 104.



Machine Information menu

Turning the System On/Off

Turning Off

The following describes how to turn off the Compact Processor.

1 Set the POWER switch on the rear of the Compact Processor to off.

2 Turn off the power of any other equipment to be used during the meeting.

Notes

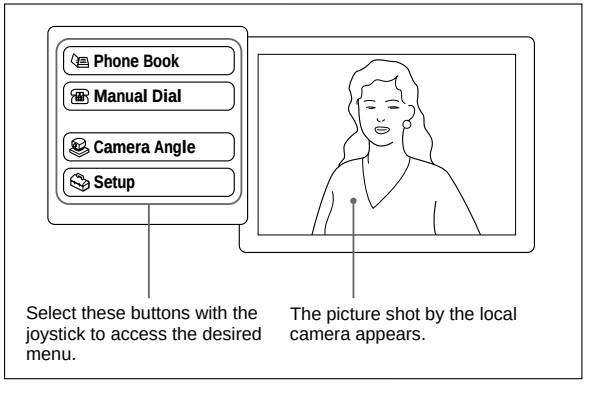
- If you are not going to use the system for an extended period, set the POWER switch to off.
- You cannot receive any calls from remote parties if the POWER switch is set to off.

How to Operate the Menu

The different menu is opened whether the system is in communication or not.

Switching the Menu Not in Communication

The following launcher menu is always displayed when the system is not in communication. Select the desired menu with the joystick on the Remote Commander, then press the joystick. The desired menu will be opened.


Phone Book
Manual Dial
Camera Angle
Setup
Select these buttons with the joystick to access the desired menu.
The picture shot by the local camera appears.

Phone Book menu
This is used to hold a meeting with a registered party or to register or modify a party. (Pressing the PHONE BOOK button on the Remote Commander accesses the Phone Book menu directly.)

For details on the Phone Book menu, see pages 39 to 41, 71 to 77.

Manual Dial menu
This is used to hold a meeting with an unregistered party.

For details on the Manual Dial menu, see pages 36 to 39.

How to Operate the Menu

Camera Angle menu
This is used to control the angle and zoom of the camera. (Pressing the CAMERA button on the Remote Commander accesses the Camera Angle menu directly.)

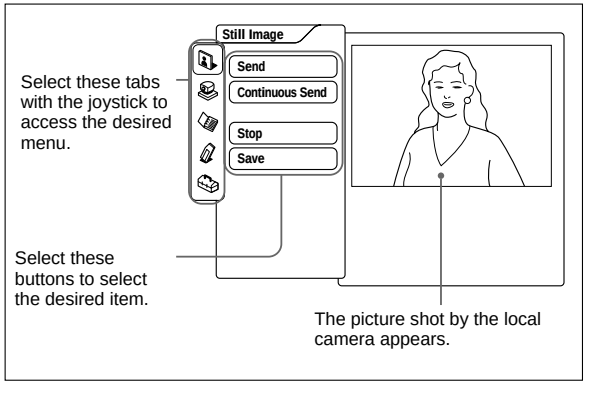
For details on the Camera Angle menu, see page 50.

Setup menu
This is used to register or modify the setup of the system.

For details on the Setup menu, see pages 78 to 104.

Switching the Menu in Communication

Press the MENU button on the Remote Commander in communication, the Still Image menu is opened. Select the desired menu with the joystick on the Remote Commander, then press the joystick. The desired menu will be opened.


Still Image
Send
Continuous Send
Stop
Save
Select these tabs with the joystick to access the desired menu.
Select these buttons to select the desired item.
The picture shot by the local camera appears.

Still Image menu
This is used to control a still image. (Pressing the STILL IMAGE button on the Remote Commander accesses the Still Image menu directly.)

For details on the Still Image menu, see pages 61 to 64.

Camera menu
This is used to control the camera. (Pressing the CAMERA button on the Remote Commander accesses the Camera menu directly.)

For details on the Camera menu, see pages 49 to 55.

Phone Book menu
This is used to hold a meeting with a registered party or to register or modify a party. (Pressing the PHONE BOOK button on the Remote Commander accesses the Phone Book menu directly.)

For details on the Phone Book menu, see pages 39 to 41, 71 to 77.

Setup menu
This is used to register or modify the setup of the system.

For details on the Setup menu, see pages 78 to 104.

Memory Stick menu
This is used to use a “Memory Stick.” You can access this menu only when the “Memory Stick” is inserted.

For details on the Memory Stick menu, see pages 58 and 59.

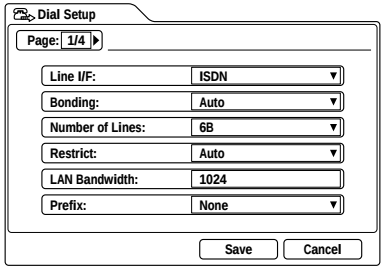
http://getMANUAL.com

How to Operate the Menu

Operating the Menu

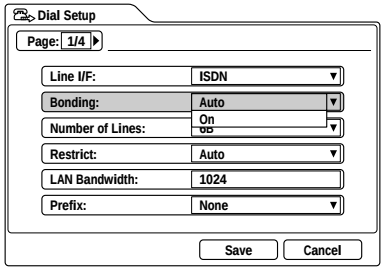
This describes the basic menu operation, taking the Dial Setup menu as an example.

1 Open the Dial Setup menu from the Setup menu (page 29).



2 Select the desired item with the joystick on the Remote Commander, then press the joystick.

The settings of the selected item is pulled down.



3 Select the desired setting with the joystick on the Remote Commander moved up or down, then press the joystick.

4 Select Save with the Remote Commander, then press the joystick.

The modification is complete.

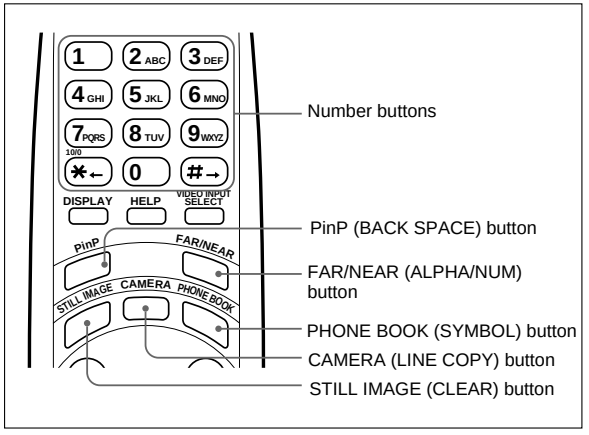
To page up or down the menu
Select Page with the joystick on the Remote Commander, then move the joystick to the right or left.

To return to the previous level hierarchy of the menu
Press the RETURN button on the Remote Commander.

Turning Off the Indicators

Press the DISPLAY button on the Remote Commander to turn off the indicators. To turn on the indicators, press it again.

Entering Characters



To switch the input mode
Press the FAR/NEAR (ALPHA/NUM) button on the Remote Commander repeatedly to switch the input mode.

How to Operate the Menu

To enter characters
Press the number buttons on the Remote Commander to enter the desired character. Each time you press the button, the character is input from among the alphabets on each button, or the numbers on each.
To enter special characters (symbols), press the PHONE BOOK (SYMBOL) button repeatedly to select a desired character.

To copy the number
Press the CAMERA (LINE COPY) button on the Remote Commander. The number in the box above is copied to the next box.

To delete a character
Press the PinP (BACK SPACE) button on the Remote Commander. The last entered character is deleted.

To delete all characters in a box
Move the cursor to the box where you want to delete the entry, then press the STILL IMAGE (CLEAR) button on the Remote Commander.

Chapter 2

Basic Operation During a Meeting

Calling a Remote Party

You can start a meeting with a remote party by dialing. Once you have made a connection with the remote party, you can begin talking just like normal phone call.
The following describes how to call a remote party.

You have to register your local system data and set up the Compact Processor before starting a meeting.

For details on registration and setup, see Chapter 4 "Registration and Setup."

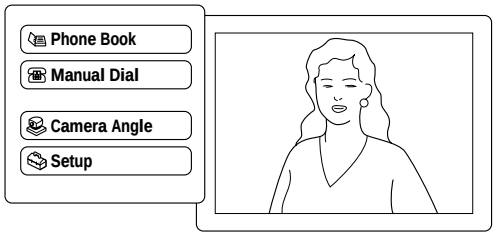
Notes

- Meetings using the V.35 interface are available when the optional PCS-I161 V.35 board has been installed.
- Meetings on a LAN are available when the system has been upgraded with the optional PCS-UC161 Upgrade Kit.

Calling a Remote Party

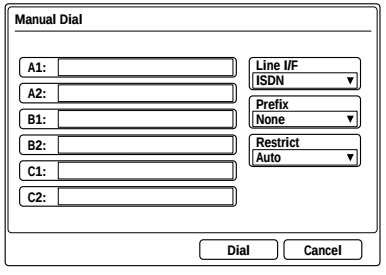
Calling an Unregistered Remote Party

The following launcher menu is always displayed on the monitor screen not in communication.



1 Select Manual Dial with the joystick on the Remote Commander, then press the joystick. Or press the CONNECT/DISCONNECT (✆/✆) button on the Remote Commander.

The Manual Dial menu appears on the monitor screen.



Note

The B1 to C2 boxes are only displayed when you have installed the optional PCS-I160 BRI Board.

2 **When connecting via the ISDN lines**

Enter the telephone number of the remote party to have a meeting with in the A1 and A2 boxes.

When connecting on a LAN

Enter the IP address (or the host name and domain name) of the remote party to have a meeting with in the IP Address box.

Move the joystick up or down to select the box, then enter the telephone number or IP address with the number buttons on the Remote Commander.

- To delete a telephone number or IP address, press the STILL IMAGE (CLEAR) button on the Remote Commander. The number or IP address entered is deleted.
- To copy a telephone number, press the CAMERA (LINE COPY) button. The number entered are copied to the next box.
- To delete the last number, press the PinP (BACK SPACE) button on the Remote Commander. The last number is deleted.

Note

Do not enter your prefix number in these boxes. The prefix number will be set in step **4**.

3 Set up the line interface.

Select Line I/F with the joystick on the Remote Commander, then press the joystick. Select the desired setting with the joystick moved up or down, then press the joystick.

ISDN: Connects to a TV conferencing system via the normal ISDN line.
Telephone: Connects to a phone to have a voice meeting via the normal ISDN line.
V.35: Connects to a TV conferencing system via the V.35 interface. (Option)
LAN: Connects to a TV conferencing system using a LAN. (Option)

(Continued)

4 Select the prefix setting.

Select Prefix with the joystick on the Remote Commander, then press the joystick. Select the desired setting with the joystick moved up or down, then press the joystick.

None: Does not use the prefix number.
Prefix-A: Uses the setting A set in the Dial Setup menu.
Prefix-B: Uses the setting B set in the Dial Setup menu.
Prefix-C: Uses the setting C set in the Dial Setup menu.

For details on the setting up the prefix number, see "Dial Setup menu" on page 89.

5 Select the ISDN transfer rate.

Select Restrict with the joystick on the Remote Commander, then press the joystick. Select the desired setting with the joystick moved up or down, then press the joystick.

Auto: Connects to a remote party with a normal ISDN line.
56K: Connects to a region or country with a 56 Kbps ISDN transfer rate.

Note

When using the Compact Processor as an MCU, or holding a meeting on a LAN, the Restrict item cannot be set.

6 Select Dial with the joystick on the Remote Commander, then press the joystick. Or press the CONNECT/DISCONNECT (☎/⏏) button on the Remote Commander.

The system dials the number that is input in step **2**, and the indication "Dialing (The line interface is indicated.)" appears on the monitor screen.
When the connection is completed, the indication "MEETING STARTS!" appears on the monitor screen.

To cancel dialing before the connection is completed
Select Cancel with the joystick on the Remote Commander, then press the joystick. Or press the CONNECT/DISCONNECT (☎/⏏) button on the Remote Commander.

To set up other items than the items above

When More Options Enable is set to On in the Dial Setup menu, the More Options button is displayed at the lower part of the menu. Select More Options with the joystick on the Remote Commander, then press the joystick. The Dial Setup menu appears and you can set up the other items.

Last-number redial function

When you access the Manual Dial menu again after you have used the Manual Dial menu once, the last number dialed is entered into the boxes.

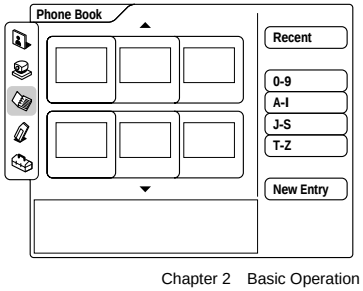
Notes

This function does not work in the following situations:
• Once you turned off the power or turned the Compact Processor to standby/sleep.
• You have not dialed though you entered a number.

Calling a Registered Remote Party

1 Press the PHONE BOOK button on the Remote Commander.

The Phone Book menu appears on the monitor screen.

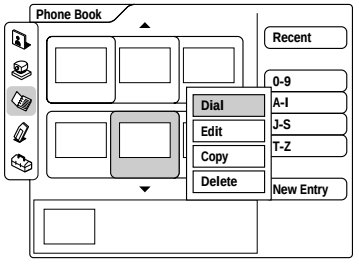


(Continued)

Calling a Remote Party

2 Select the remote party with the joystick on the Remote Commander, then press the joystick.

The sub-menu is opened on the monitor screen.



You can sort the list on the Phone Book menu.

For details, see "To sort the list on the Phone Book menu" on page 41.

3 Select Dial with the joystick on the Remote Commander, then press the joystick. Or press the CONNECT/DISCONNECT (☎/📞) button on the Remote Commander.

The system dials the selected remote party in step **2**, and the indication "Dialing (The line interface is indicated.)" appears on the monitor screen.
When the connection is completed, the indication "MEETING STARTS!" appears on the monitor screen.

To cancel dialing before the call is connected

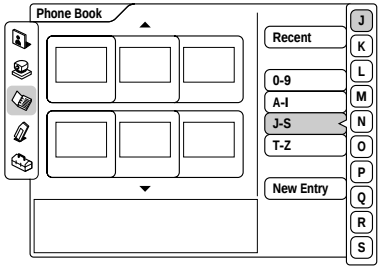
Select Cancel with the joystick on the Remote Commander, then press the joystick. Or press the CONNECT/DISCONNECT (☎/📞) button on the Remote Commander.

To sort the list on the Phone Book menu

You can sort the list on the Phone Book menu.

The list on the Phone Book menu will be sorted by selecting the buttons at the right on the menu.

When you select Recent, most recently dialed six indexes are displayed.
When you select 0–9, A–I, J–S, or T–Z, and select the desired letter, six indexes which start from the specified letter are displayed.



Receiving a Call

When a call comes in, the connection process with differs depending on the setting of the answer mode.

Auto answer mode
The system automatically receives the call and starts the meeting. However, even if you are not ready to start the meeting, the local picture will be displayed on the remote party's monitor screen.

Manual answer mode
Incoming calls are not automatically connected. You must manually connect the call.
You can start the meeting whenever you are ready.

Notes
- The POWER switch of the Compact Processor must be set to on to receive a call.
- Make sure that the TV monitor is on standby.

Setting the Answer Mode

When you select the auto answer mode, set Auto Answer to On in the Answer Setup menu. When you select the manual answer mode, set it to Off.

For details on the Auto Answer item, see "Answer Setup menu" on page 94.

Answering Calls in Auto Answer Mode

The system automatically receives a call when it is on standby or in sleep mode.

When a call comes in, the Compact Processor starts ringing, and the indication "Incoming Call" appears on the monitor screen.
Once the connection has been made, the remote party appears on the local monitor screen, and the local party appears on the remote screen. You are now ready to hold your meeting.
The indication "MEETING STARTS!" appears on the monitor screen.

Answering Calls in Manual Answer Mode

When your system is in manual answer mode, you need to connect incoming calls manually.
When a call comes in, the Compact Processor starts ringing, and the indication "Incoming Call. Respond?" appears on the monitor screen.

Select OK with the joystick on the Remote Commander, then press the joystick. Or press the CONNECT/DISCONNECT (☎/⏏) button on the Remote Commander.

Once the connection has been made, the remote party appears on the local monitor screen, and local party appears on the remote screen. You are now ready to hold your meeting.
The indication "MEETING STARTS!" appears on the monitor screen.

If you do not want to receive a call
Select Cancel with the joystick, then press the joystick. Or press the CONNECT/DISCONNECT (☎/⏏) button on the Remote Commander. The Compact Processor stops ringing.

If you are operating the system when a call comes in

The indication "Incoming Call. Respond?" appears on the monitor screen. If you receive the call, Select OK with the joystick on the Remote Commander, then press the joystick. If you cannot receive the call according to your current operations, Select Cancel with the joystick on the Remote Commander, then press the joystick.

When the system fails to make a connection

The indication "CANNOT COMPLETE CONNECTION" appears along with an ISDN cause code and a message on the monitor screen.

For details on ISDN cause codes and messages, see "On Screen Messages" on page 137.

Receiving a Call

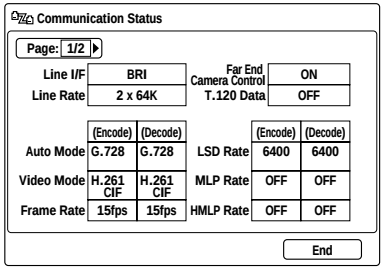
When the optional PCS-UC161 Upgrade Kit has been installed

If a call comes in via the ISDN line during the meeting on a LAN, the Compact Processor is busy.

Checking the Connection Status

During a meeting, you can check the status of the communication. Elapsed time also appears on the monitor screen during a meeting.

1 Open the Communication Status menu.



2 Check the status:

Line I/F: Displays the line interface being used.
Line Rate: Displays the number of lines and the transfer rate being used.
Far End Camera Control: Displays the far end camera control protocol.
T.120 Data: Displays the data transmission protocol.

The items below are separately displayed in the columns Encode and Decode.
The columns Encode indicate the status being sent, the columns Decode indicate the status being received.

Audio Mode: Displays the audio encoding system.
Video Mode: Displays the video encoding system.
Frame Rate: Displays the maximum frame rate of the motion picture.
LSD Rate: Displays the LSD (Low Speed Data) rate.
MLP Rate: Displays the MLP (Multi Layer Protocol) rate.
HMLP Rate: Displays the HMLP (High speed Multi Layer Protocol) rate.

Checking the Connection Status

To close the Communication Status menu
Select End with the joystick on the Remote Commander, then press the joystick. The menu returns to the Setup menu.

On elapsed time

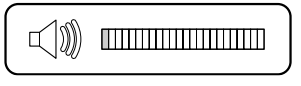
When you set Time Display to On in the General Setup menu, the elapsed time appears on the monitor screen during a meeting. You can use it as a guide, and it is convenient for checking communication costs. If you do not need to display the elapsed time, set Time Display to Off.

For details on the Time Display setting, see "General Setup menu" on page 98.

Adjusting the Sound

Adjusting the Volume

You can adjust the volume sent from remote parties.
Press the VOLUME/DOC-BRIGHT + button to increase the volume; the VOLUME/DOC-BRIGHT – button to decrease it.
The volume bar appears on the monitor screen.
After awhile, the bar automatically disappears if you do not operate.



Notes

• You have to set the volume of the TV monitor at first.
• If feedback occurs, decrease the volume.

Muting Local Conversations – Mute Function

You can mute local conversations.
If you press the MIC/DOC-DARK button, local conversations will not be sent to the remote party.
When local conversations are muted, the mute indication MIC OFF is displayed on the monitor screen.

To cancel muting
Press the MIC/DOC-DARK button on the Remote Commander again.
The mute indication MIC OFF disappears from the monitor screen.

Synchronizing Voice and Motion – Lip Synchronization

During the meeting, voice and motion may lose synchronization.
The automatic lip synchronization function built into the system solves this problem by closely synchronizing audio and video before they are transmitted to the remote party.

Adjusting the Sound

When you use the lip synchronization, set Lip Sync to On in the Audio Setup menu. When you do not use the lip synchronization, set it to Off.

For details on the Lip Sync setting, see "Audio Setup menu" on page 97.

Note

The lip synchronization function only works for your own party. To activate the lip synchronization function at the remote party, you must ask them to do so.

On the Echo canceler

The Compact Processor is equipped with the echo canceler. When you use the built-in echo canceler, set Echo Canceler to Internal in the Audio Setup menu; when not in use, set to Off. If you use an echo canceler of external audio equipment connected to the system, set Echo Canceler to External. It should normally be set to On.

For details on the Echo Canceler setting, see "Audio Setup menu" on page 97.

Adjusting the Camera

You can adjust the local camera to obtain the best viewing results.
During communication, you can also adjust the remote camera, and adjust images being sent from the remote camera.

Notes

- A malfunction may occur if the local and remote parties try to adjust the same camera at the same time.
- You cannot control the remote camera during a meeting if H.281 is not selected as the far end camera control protocol.
- You cannot control the remote camera during a meeting if the Compact Processor is used as the MCU.
- If you adjust the camera angle during a meeting, a motor noise may picked up by the microphone, and it may be heard through a speaker. This is not a malfunction.
  If you frequently adjust the camera, we recommend you to use the optional PCS-A300 Microphone. After connecting the PCS-A300 Microphone, the built-in microphone does not function.

For details on the setting when using the PCS-A300 Microphone, see "Audio Setup menu" on page 97.

To display the picture on the whole screen

When you adjust the camera, press the PinP button on the Remote Commander. The picture will be displayed on the whole screen. To return to the previous screen, press the joystick, the RETURN button, or the PinP button on the Remote Commander.

To select the camera to be adjusted

Before adjusting the camera, you must select the local or remote camera to be controlled.

Press the FAR/NEAR button on the Remote Commander.

When the remote camera is selected, the indication FAR appears on the monitor screen.
When the local camera is selected, the indication FAR does not appear on the monitor screen.

Adjusting the Camera

Note

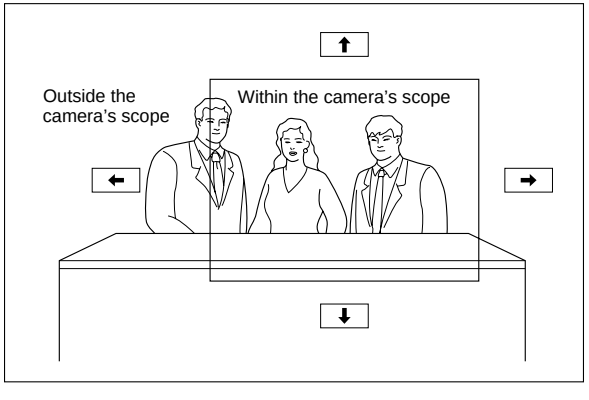
You cannot control the remote camera if you do not set Far End Camera Control to On in the Dial Setup menu at the local, and set Far End Camera Control to Off in the Answer Setup menu at the remote.

Adjusting the Camera Angle and Zoom

You can adjust the camera angle and zoom.

To adjust the camera angle

Move the joystick on the Remote Commander up, down, to the left, or to the right to view any areas not currently covered by the camera. (Select Camera Angle from the launcher menu to open the Camera Angle menu when the system is not in communication.)



To adjust zoom

Press the ZOOM/TV-CH T button on the Remote Commander to zoom in or the ZOOM/TV-CH W button to zoom out. Adjust zoom to display the desired picture.

Adjusting Focus and Brightness

Focus and brightness are automatically adjusted.
We recommend you not to use the manual adjustments since the camera automatically adjust itself for the best focus and brightness.

Select Adjustment with the joystick on the Remote Commander in the Camera menu, then press the joystick. The guidance will appear and you can adjust the focus and brightness.

To adjust focus manually

Press the PHONE BOOK button on the Remote Commander, the focus adjustment setting changes to the automatic adjustment.

Press the STILL IMAGE button on the Remote Commander repeatedly to move the focus point closer to the camera.
Press the CAMERA button on the Remote Commander repeatedly to move the focus point further away to the camera.

To adjust brightness

Press the VOLUME/DOC-BRIGHT+ button on the Remote Commander repeatedly to make the picture brighter.
Press the VOLUME/DOC-BRIGHT – button on the Remote Commander repeatedly to make the picture darker.

To shoot with the backlight function

When you shoot a subject with the light source behind the subject, use the backlight function.

Each time you press the MIC/DOC-DARK button, the backlight function is switched between on and off.

http://getMANUAL.com

Adjusting the Camera

Presetting Angle and Zoom Settings

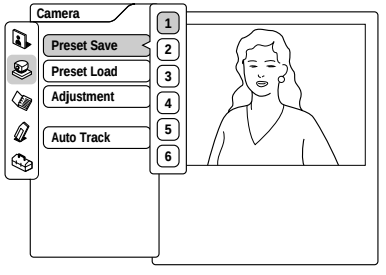
You can store the camera settings in memory up to six, and each preset has the angle and zoom settings.
Once a setting has been stored, you can easily recall a setting from the six presets.

To store a setting

1 Open the Camera menu.

2 Select Preset Save with the joystick on the Remote Commander, then press the joystick.

3 Select the preset number which you want to store the setting with the joystick on the Remote Commander, then press the joystick.



4 Set up the angle and zoom.

For details on the angle and zoom settings, see "Adjusting the Camera Angle and Zoom" on page 50.

5 Select Preset Save with the joystick on the Remote Commander, then press the joystick.

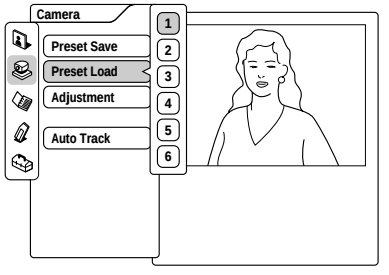
The setting will be stored under the selected number.

To recall a preset

1 Select Preset Load with the joystick on the Remote Commander, then press the joystick.

2 Select the number button (1 to 6) with the joystick on the Remote Commander, then press the joystick.

The camera is automatically adjusted by the preset under the selected number.



On backup

The memories of the preset are erased when the POWER switch on the Compact Processor is set to off. To retain those memories, set the BACKUP switch at the rear of the camera to ON.

Notes

- In the camera, the built-in lithium battery acts as the power source for retaining the memories and is kept charged as long as the system is used. If the system is used for shorter period of time with the BACKUP switch set to ON, however, the battery is gradually discharged. Besides if you do not use the system at all for almost 12 weeks, the battery is completely discharged. To retain the memories of the settings, you should recharge the battery.
- To recharge the battery, connect the camera to the Compact Processor and leave it for approximate 48 hours with the POWER switch set to on.

Tracking a Subject Automatically — Automatic Target Tracking Function

You can have the camera memorize a particular color or brightness so that automatically tracks a subject having the memorized color or brightness.
If a subject almost goes off the screen, the camera performs the pan/tilt action so that the subject is placed back in the middle of the screen.

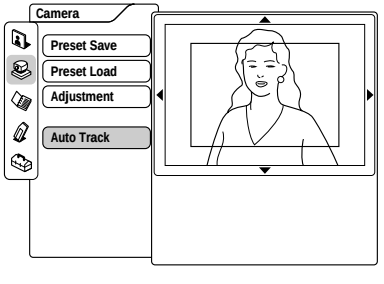
Note

The automatic target tracking function is only available for the local camera.

1 Open the Camera menu.

2 Select Auto Track with the joystick on the Remote Commander, then press the joystick.

The frame appear on the monitor screen.



3 Use the joystick and the ZOOM/TV-CH buttons on the Remote Commander to place a subject into the frame.

Notes

- Be sure to place the subject so that the portion uniform in brightness and color is in the frame.
- The camera might not recognize a subject if the portion different from the subject in brightness and color, such as the backdrop, is placed together in the frame.

4 Press the joystick on the Remote Commander.

The indication ❁ appears on the monitor screen.
The automatic target tracking function starts and the frame disappears from the monitor screen.

To cancel the automatic target tracking function

Select Auto Track Cancel with the joystick on the Remote Commander, then press the joystick.
The indication ❁ disappears from the monitor screen.

If the frame is repeatedly extended to the full screen

The camera does not recognize the subject. Repeat steps **2** to **4** again.

If the lamp at the side of the lens lights up

The camera is not capturing the memorized subject correctly. In this case, perform the pan/tilt operation so that the subject comes into the screen. Or have the subject memorized onto the camera again.

Note

When the frame does not track the subject, repeat steps **2** and **4** until the frame starts tracking the subject while adjusting the lighting and the portion of the subject so that the color and brightness of the subject is optimized.

Selecting the Picture and Sound

You can select the picture and sound from both the local and remote sites equipment.

To switch the picture

To switch the picture displayed on the monitor from the local or remote picture

Press the FAR/NEAR button on the Remote Commander, then switch the picture by selecting the icons on the monitor screen with the joystick on the Remote Commander.

Each time you press the button, the picture on the monitor screen switches between the local and the remote.

To switch the video that will be sent to the remote sites

Press the VIDEO INPUT SELECT buttons on the Remote Commander to switch the picture on the screen.

Main: The main camera is selected.
Object: The optional PCS-DS150/DS150P Document Stand is selected.
AUX1: The equipment connected to the VIDEO IN AUX 1 jack is selected.
AUX2: The equipment connected to the VIDEO IN AUX 2 jack is selected.

To switch the sound

Set Input Select in the Audio Setup menu as follows:
MIC: The microphone is selected.
AUX: The external equipment is selected.
MIC + AUX: Both the microphone and the external equipment are selected.

For details on the Input Select item, see "Audio Setup menu" on page 97.

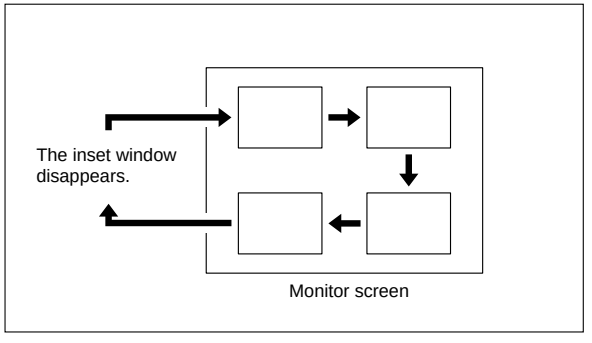
Note

The audio input of the remote cannot be switched from the local system.

Monitoring Yourself in the Inset Window

The inset window allows you to monitor your own party while viewing the remote party. **(Picture-in-picture function)**

Press the PinP button on the Remote Commander in communication.
If an inset window is not displayed, the inset window appears on the monitor screen.
When it is already displayed, each time you press the PinP button, the inset window moves as follows:



Notes

- The inset window is displayed at the same position as it was displayed last. If the inset window is not displayed last, it is not displayed.
- The inset window does not appear when your system is not connected to a remote party.

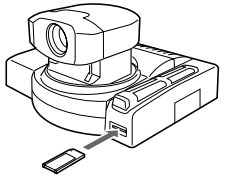
Displaying a Still Picture

You can use still pictures stored in a “Memory Stick.”

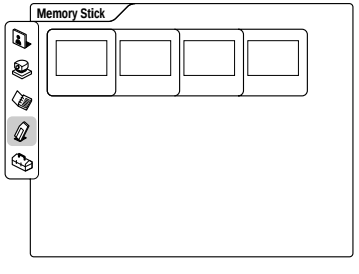
Displaying a Still Picture Stored in the “Memory Stick”

1 Insert the “Memory Stick” into the Memory Stick slot.

Insert it in the arrow mark direction with the mark faced upward.



2 Open the Memory Stick menu.



3 Select the desired still picture with the joystick on the Remote Commander, then press the joystick.

The sub-menu is opened.

4 Select Load with the joystick on the Remote Commander, then press the joystick.

The menu disappears from the monitor screen and the selected still picture is displayed.

If an unformatted “Memory Stick” is inserted
The message “Format a Memory Stick?” will appear. When you format the “Memory Stick,” select OK. When you do not format it, select Cancel.

To eject the “Memory Stick”

Push the “Memory Stick” inward, then release your finger. The “Memory Stick” comes out a little.

Notes on a “Memory Stick”

On file names
The file will be stored under the directory “¥DCIM¥100MSDCF” and its file name format is as follows: “DSCXXXXX.JPG”.

The usable file format of the still picture
The usable file format is up to the XGA (1024 × 768) size JPEG format (Data capacity is up to 512 KB).

The compression format
The Compact Processor compresses the data in the JPEG format. The file extension is “.jpg”.

A “Memory Stick” formatted by a computer
A “Memory Stick” formatted by a computer does not have a guaranteed compatibility with the Compact Processor. Format the “Memory Stick” using a digital still camera or the Compact Processor.

To format a “Memory Stick”
Select MS Format with the joystick on the Remote Commander in the Memory Stick menu, then select OK. The “Memory Stick” will be formatted. However, the still pictures and Phone Book list stored in the “Memory Stick” will be also deleted.

“Memory Stick” and MEMORY STICK are trademarks of Sony Corporation.

Displaying a Still Picture

Clearing the Still Picture From the Screen

Open the Still Image menu, and select Stop with the joystick on the Remote Commander, then press the joystick.

Sending Still Pictures

When you send pictures that contain lots of text, we recommend you to send that picture as a still picture. Since still pictures are more clear than moving pictures for reading text. You can send a video as a still picture of external equipment connected to the the Compact Processor, or of the camera. You can also send pictures continuously.

To display the still picture on the whole screen

When you display the still picture on the whole screen, press the PinP button on the Remote Commander. The still picture will be displayed on the whole screen. To return to the previous screen, press the joystick, the RETURN button, or the PinP button on the Remote Commander.

Sending One Still Picture

1 Open the Still Image menu.

2 Set up the angle and zoom if you readjust them.

For details on the angle and zoom settings, see “Adjusting the Camera Angle and Zoom” on page 50.

3 Select Send with the joystick on the Remote Commander, then press the joystick.

The moving picture on the monitor screen is frozen, and the still picture is sent. After the transmission, the message “Transmission of the still picture is completed” appears.

To clear the still picture from the screen

Select Stop with the joystick on the Remote Commander, then press the joystick.

Sending Still Pictures

Sending Still Pictures Continuously

1 Open the Still Image menu.

2 Set up the angle and zoom if you readjust them.

For details on the angle and zoom settings, see “Adjusting the Camera Angle and Zoom” on page 50.

3 Select Continuous Send with the joystick on the Remote Commander, then press the joystick.

The moving picture on the monitor screen is frozen, and the still picture is continuously sent.

To cancel sending still pictures

Select Stop with the joystick on the Remote Commander, then press the joystick.

Note

The interval that takes to send the next still picture depends on the transfer rate.

Sending a Still Picture Stored in the “Memory Stick”

1 Open the Memory Stick menu.

2 Select the desired still picture with the joystick on the Remote Commander, then press the joystick.

The sub-menu is opened.

3 Select Send with the joystick on the Remote Commander, then press the joystick.

The selected still picture is displayed and it is sent. After the transmission, the message “Transmission of the still picture is completed” appears.

Note

Create the directory “¥DCIM¥100MSDCF” for the “Memory Stick,” and store the file under that directory. The file format must be as follows: “NNNnnnnn.JPG” (N = alphabet, n = number).

Clearing the Still Picture From the Screen

Open the Still Image menu, and select Stop with the joystick on the Remote Commander, then press the joystick.

Saving a Still Picture Into the “Memory Stick”

1 Display the still picture to be stored.

2 Insert the “Memory Stick” into the Memory Stick slot.

3 Open the Still Image menu.

4 Select Save with the joystick on the Remote Commander, then press the joystick.

The selected still picture is stored into the “Memory Stick.”

Note

Do not remove the “Memory Stick” until the data is stored. The “Memory Stick” may be broken, or the Compact Processor may malfunction.

When the write-protect tab on the “Memory Stick” is set to LOCK

The message appears, and you cannot store a still picture into the “Memory Stick.”

When the capacity of the “Memory Stick” is full

The message appears, and you cannot store a still picture into the “Memory Stick.”

When an unformatted “Memory Stick” is inserted

The message “Format a Memory Stick?” appears When you format the “Memory Stick,” select OK, when you do not format it, select Cancel.

Note

A file is saved as a new file.

Sending the Dial Tone to the Remote Party

You can send the dial tone (Dual Tone Multi Frequency) assigned to the 0 – 9, #, and * buttons on the Remote Commander to control the remote system.

1 Press the * button on the Remote Commander.

The DTMF screen appears on the monitor screen.

2 Press one of the number buttons (0 – 9, #, and *) that will be sent to the remote system.

3 Press the joystick on the Remote Commander.

The DTMF screen disappears from the monitor screen, and the dial tone will be sent to the remote system.

Ending a Meeting

Press the CONNECT/DISCONNECT (☎/🕾) button on the Remote Commander.
The message appears on the monitor screen.

To disconnect the call
Select OK with the joystick on the Remote Commander, then press the joystick. Or press the CONNECT/DISCONNECT (☎/🕾) button on the Remote Commander again.

Note
The Compact Processor remains on even if the connection is broken.

To continue your meeting
Select Cancel with the joystick on the Remote Commander, then press the joystick.

Chapter 3

Advanced Operation

Connecting With an MCU

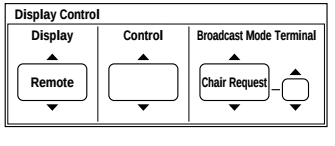
You can perform a multiple communication with making a connection to an MCU (Multipoint Control Unit).
Once you connect with the MCU that has the chair control function, the chair control is activated among 99 terminals.

Note
When you have upgraded the system using the optional PCS-UC161 Upgrade Kit and using a LAN, the chair control is deactivated.

1 Connect to an MCU.

2 Press the FAR/NEAR button on the Remote Commander.

The Display Control menu appears on the monitor screen.



Broadcast Mode: Selects the broadcast mode.
Terminal: Selects the terminal number from 1 to 99.

(Continued)

Connecting With an MCU

3 Select Chair Request from Broadcast Mode with the joystick on the Remote Commander.

Note

When you do an incapable operation, the indication "Command is rejected by MCU" appears on the monitor screen.

To see a picture of the selected terminal

1 Select Receive from Broadcast Mode with the joystick on the Remote Commander.

2 Select the terminal number wih the joystick moved up or down, then press the joystick.

The picture of the selected terminal appears on the local monitor.

Note

When you have not selected the terminal number, a terminal which has the lowest number is first selected.

To broadcast a picture of the selected terminal to all the terminals

1 Select Broadcast from Broadcast Mode with the joystick on the Remote Commander.

2 Select the terminal number with the joystick moved up or down, then press the joystick.

A picture of the selected terminal appears on your monitor and it is broadcast to all terminals.

To broadcast a picture of your terminal to all the terminals

1 Select MCU with the joystick on the Remote Commander, then press the joystick.

2 Select Self Broadcast wih the joystick moved up or down, then press the joystick.

A picture on your monitor is broadcast to all the terminals. The indication ▦ appears on the monitor screen when you broadcast.

To end the chair control

Press the FAR/NEAR button on the Remote Commander. Select Release from Broadcast Mode with the joystick on the Remote Commander, then press the joystick.

Voice Meeting

The system can connect to a normal phone to hold a meeting using the sound only. **(Voice Meeting)**
The basic procedure is same as one with images and sound.

Note
When you have upgraded the system using the optional PCS-UC161 Upgrade Kit and using a LAN, you cannot do the voice meeting.

To start a voice meeting with unregistered remote parties

Set Line I/F to Telephone in the Manual Dial menu.

For details on the setting, see "Calling an Unregistered Remote Party" on page 36.

The indication "VOICE ONLY" appears on the monitor screen, and the local picture is displayed on the local monitor screen.

To register remote parties for holding a voice meeting

Set Line I/F to Telephone in the List Edit menu.

For details on the registration, see "Calling a Registered Remote Party" on page 39.

To set the audio protocol

Set up the Telephone item in the Dial Setup menu.
When you call, set Telephone to Auto. This automatically sets to G.711 μ-law (NTSC); to G.711 A-law (PAL).
When you receive, the audio protocol setting is not required.

For details on the setup, see "Dial Setup menu" on page 89.

Chapter 4

Registration and Setup

Registering a Remote Party

You can register a remote party before making the connection. You can register up to 500 remote parties.

Notes
- Register the information in the boxes B1 to C2 when you have installed the optional PCS-I160 BRI Board to use three ISDN lines.
- Meetings on a LAN are only available when the system has been upgraded with the optional PCS-UC161 Upgrade Kit.

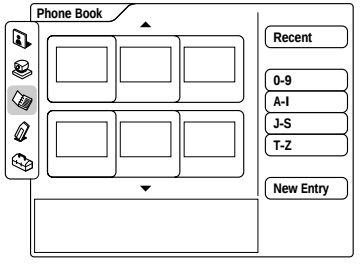
http://getMANUAL.com

Registering a Remote Party

Making an Entry

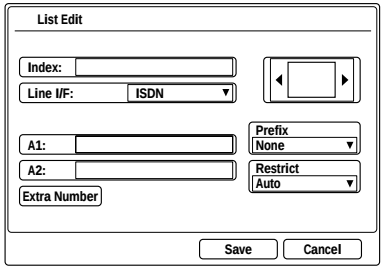
1 Press the PHONE BOOK button on the Remote Commander.

The Phone Book menu appears on the monitor screen.



2 Select New Entry with the joystick on the Remote Commander, then press the joystick.

The List Edit menu appears on the monitor screen.



3 Register the name of the remote party into the Index box.

For details on how to input, see "Entering Characters" on page 33.

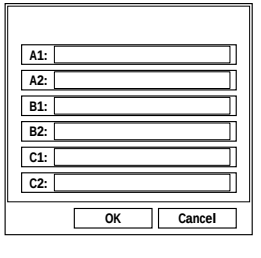
4 Set up the line interface.

ISDN: Connects to a TV conferencing system via the normal ISDN line.
Telephone: Connects to a phone to have a voice meeting via the normal ISDN line.
V.35: Connects to a TV conferencing system via the V.35 interface. (Option)
LAN: Connects to a TV conferencing system using a LAN. (Option)

5 **When selecting other than LAN in step 4**
Enter the telephone number and the sub-address for the remote party (if the remote party set a sub-address) in the A1 and A2 boxes.

If the remote party has multiple telephone numbers, enter the first number in the A1 box and the second number in the A2 box.
Enter the asterisk (✱) after the telephone number, then enter the sub-address. You cannot use the alphabet in a sub-address.

When you connect with more than 2B channels
You have to set up the boxes B1 to C2. Select Extra Number with the joystick on the Remote Commander, then press the joystick. The following menu is opened. Register the telephone numbers and the sub-address (if the remote party set a sub-address) into the boxes B1 to C2.



When selecting LAN in step 4
Enter the IP address (or the host name and domain name) of the remote party.

(Continued)

6 Select the line interface icons or still images stored in the "Memory Stick."

Move the joystick to the left or right to select the icon or still image, then press the joystick.

Note

If the "Memory Stick" which has still images is not inserted, you cannot select still images.

7 Select the prefix number setting.

None: Does not use the prefix number.
Prefix-A: Uses the setting A set in the Dial Setup menu.
Prefix-B: Uses the setting B set in the Dial Setup menu.
Prefix-C: Uses the setting C set in the Dial Setup menu.

For details on setting the prefix number, see "Dial Setup menu" on page 89.

8 Select the ISDN transfer rate.

Auto: Connects to a remote party with a normal ISDN line.
56K: Connects to a region or country with a 56 Kbps ISDN transfer rate.

9 Select Save with the joystick on the Remote Commander, then press the joystick.

The message "Save list?" appears.

10 Select OK with the joystick on the Remote Commander, then press the joystick.

The registration is complete.

Notes

- When using the Compact Processor as the MCU, item below cannot be set up:
  Restrict.
- When using a LAN, item below cannot be set up:
  Restrict.

To set up other items than the items above

When More Options Enable is set to On in the Dial Setup menu, the More Options button is displayed at the lower part of the menu. Select More Options with the joystick on the Remote Commander, then press the joystick. The Dial Setup menu appears and you can set up the other items.

Modifying an Entry

You can modify the name and telephone numbers of an entry.

1 Select the Index title to be modified with the joystick, then press the joystick.

2 Select Edit with the joystick on the Remote Commander, then press the joystick.

The List Edit menu appears.

3 Modify the entry.

4 Select Save with the joystick on the Remote Commander, then press the joystick.

The entry is modified.

Registering a Remote Party

Deleting Registered Entries

You can delete a registered entry as follows.

1 Select the Index title to be deleted with the joystick on the Remote Commander.

2 Select Delete with the joystick on the Remote Commander, then press the joystick.

The indication “Delete list?” appears on the monitor screen.

3 Select OK with the joystick on the Remote Commander, then press the joystick.

The selected Index entry is deleted.

To cancel deleting

Select Cancel with the joystick on the Remote Commander in step **3**, then press the joystick.

Duplicating the Setting of the Phone Book Menu

1 Select the index to be copied with the joystick on the Remote Commander, then press the joystick.

2 Select Copy with the joystick on the Remote Commander, then press the joystick.

The index is duplicated, and “XXXX-2” appears in the Index box. Since the setting has been duplicated, you can use it with a little modification.

Notes on Registration

General note

If the Restrict setting of the remote party is set to 56K in the Answer Setup menu, the connection will be made at 56 Kbps even if you set Restrict to Auto in the Dial Setup menu.

Note on the optional PCS-I160 BRI Board

If you have installed the optional PCS-I160 BRI Board, you can use three ISDN lines (up to 6B channels). In this case, register second telephone number in the B1 and B2 boxes, and third telephone number in the C1 and C2 boxes.

Note on the optional PCS-I161 V.35 Board

If the optional PCS-I161 V.35 Board has been installed, and connect to a private line or a terminal adaptor via the V.35 interface, select V.35 in Line I/F, and enter as follows:

- When not using RS-366, set V.35 RS-366 to Off in the Dial Setup menu. Do not enter the telephone numbers.
- When using RS-366, set V.35 RS-366 to On in the Dial Setup menu. Enter the telephone numbers.
- You do not need to set up Restrict.

To change the ISDN transfer rate temporarily

The Compact Processor is set to 64 Kbps for an ISDN line at factory. However, some countries (e.g., the USA) or regions may have 64 Kbps and 56 Kbps ISDN transfer rates. If the remote party has set its transfer rate to 56 Kbps, you need to set your system to 56 Kbps to communicate with that system. Before making a call to such a party, set Restrict to 56K in the Dial Setup menu.

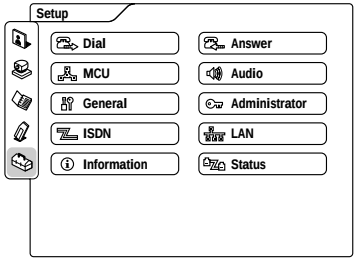
Registering Local Information

Before holding a meeting, you will need to register your local information on the ISDN Setup menu, such as the local directory number.

Setting Up the ISDN Setup Menu

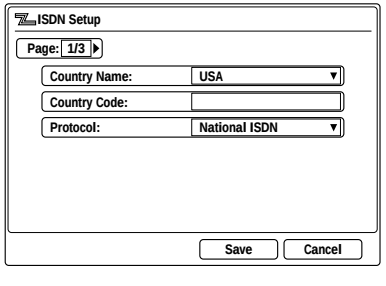
1 Select Setup with the joystick on the Remote Commander in the launcher menu, then press the joystick.

The Setup menu appears on the monitor screen.



2 Select ISDN with the joystick on the Remote Commander, then press the joystick.

The ISDN Setup menu (Page 1) appears on the monitor screen.



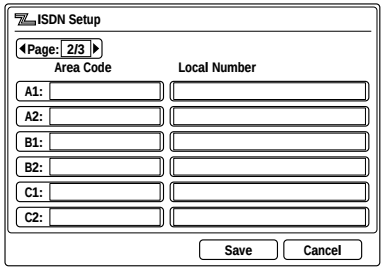
3 Select your country with the joystick, then press the joystick.

4 Enter your country code in the Country Code box.

(e.g., enter “1” for the USA.)

5 Select Page 1/3 with the joystick on the Remote Commander, then move the joystick to the right.

The ISDN Setup menu (Page 2) appears on the monitor screen.



6 Enter your area code in the Area Code boxes A1 and A2.

Do not enter the first zero number of your area code. (e.g., enter only “408” for California.)

Note

Register information in the boxes B1 to C2 if you have installed the optional PCS-I160 BRI Board.

7 Enter your telephone number and sub-address (if you set your sub-address) in the Local Number boxes A1 and A2.

Enter the asterisk (✱) after the telephone number, then enter the sub-address. You cannot use the alphabet in a sub-address.

8 Select Page 2/3 with the joystick on the Remote Commander, then move the joystick to the right.

The ISDN Setup (SPID) menu (Page 3) appears on the monitor screen. (This is only for the USA and Canada.)

(Continued)

Registering Local Information

9 Set up the ISDN Setup (SPID) menu. (This is only for the USA.)

For details on the SPID registration, see "SPID Registration for Customers in the USA" on page 81.

10 Select Save with the joystick on the Remote Commander, then press the joystick.

The message for verification appears.

11 Select OK with the joystick on the Remote Commander, then press the joystick.

The setting is saved.

To cancel the setup

Select Cancel with the joystick on the Remote Commander, then press the joystick. Or press the RETURN button on the Remote Commander.

To page up or down the menu

Select Page with the joystick on the Remote Commander, then move the joystick to the right or left.

SPID Registration for Customers in the USA

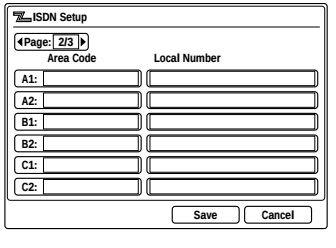
If the system is connected to a network switch of the following types, you can use ISDN lines.

- **Network switch type:** AT&T 5ESS
  Network switch software version: 5E8 or later (for National ISDN-1 and National ISDN-2)
- **Network switch type:** Northern Telecom (NTI) DMS-100
  Network switch software version: BCS34 or later (for National ISDN-1 and National ISDN-2)
- **Network switch type:** AT&T 5ESS
  Network switch software version: 5E8 or later (for Multipoint or Point-to-Point Custom ISDN)
- **Network switch type:** Northern Telecom (NTI) DMS-100
  Network switch software version: BCS34 or later (for Custom ISDN)

In these cases, you shall register the LDN (Local Directory Number: seven-digit local phone number).

Follow the steps below to register the LDN(s).

1 Open the ISDN Setup menu (Page 1).



(Continued)

SPID Registration for Customers in the USA

2 Enter your country code in the Country Code box.

If the network switch type is AT&T 5ESS (National ISDN) or NTI DMS-100 (National ISDN)
Country Code is “1”
If the network switch type is AT&T 5ESS (Multipoint Custom ISDN)
Country Code is “1✱10”
If the network switch type is AT&T 5ESS (Point-to-Point Custom ISDN)
Country Code is “1✱12”
If the network switch type is NTI DMS-100 (Custom ISDN)
Country Code is “1✱11”

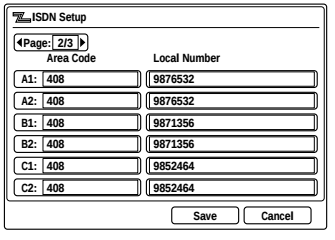
3 Open the ISDN Setup menu (Page 2).

4 Enter your LDN (s) and sub-address in the Local Number boxes.

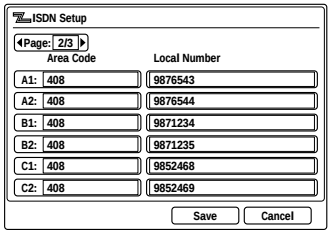
If one ISDN line is used, register the LDN in the boxes A1 and A2.
If two ISDN lines are used, register the LDNs in the boxes A1, A2, B1, B2.
If three ISDN lines are used, register the LDNs in the boxes A1, A2, B1, B2, C1, C2.

If the network switch type is AT&T 5ESS (National ISDN)
Each LDN is given for three channels (CH A1 and A2, CH B1 and B2, CH C1 and C2)
or
Each LDN is different as a separate LDN is given for each channel.

The following shows the use of three ISDN lines for AT&T 5ESS (National ISDN).
In case of each LDN is given for two channels.

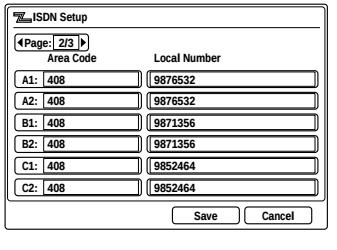


In case of each LDN is different as a separate LDN is given for each channel.



If the network switch type is AT&T 5ESS (Multipoint or Point-to-Point Custom ISDN)
Each LDN is given for three channels (CH A1 and A2, CH B1 and B2, CH C1 and C2).

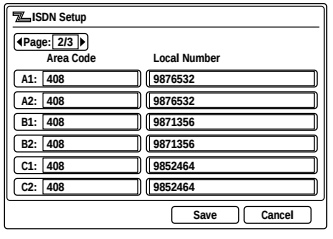
The following shows the use of three ISDN lines for AT&T 5ESS (Multipoint Custom ISDN).



(Continued)

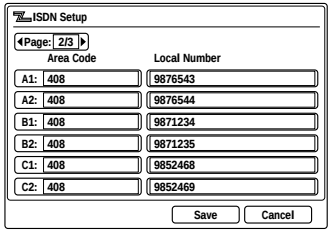
SPID Registration for Customers in the USA

The following shows the use of three ISDN lines for AT&T 5ESS (Point-to-Point Custom ISDN).

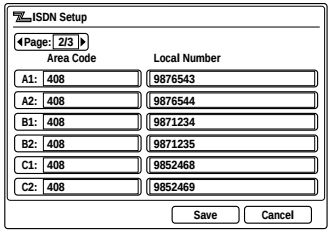


If the network switch type is NTI DMS-100 (National ISDN or Custom ISDN)
Each LDN is different as a separate LDN is given for each channel.

The following shows the use of three ISDN lines for NTI DMS-100 (National ISDN).



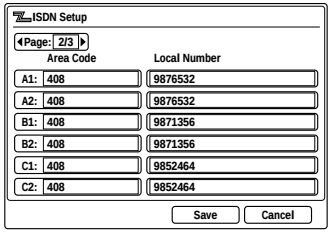
The following shows the use of three ISDN lines for NTI DMS-100 (Custom ISDN).

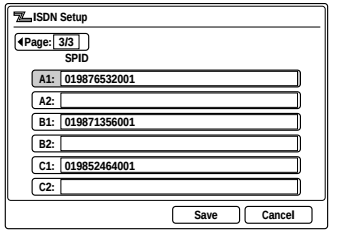


5 Open the ISDN Setup (SPID) menu (Page 3).

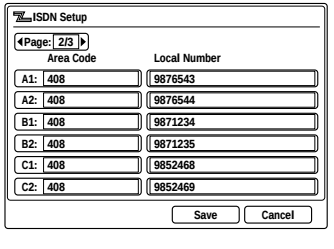
SPID in the ISDN Setup (SPID) menu and the Local Number in the ISDN Setup menu (Page 2) are entered in pairs and should not be crossed with BRI channels as each has its own LDN.
Be sure to enter each number in pairs. If it is crossed, you must correct the SPID-LDN pairs.

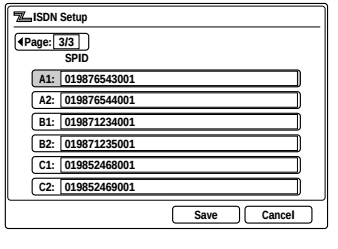
If the network switch type is AT&T 5ESS (National ISDN)
The following shows the use of three ISDN lines.
In case of each LDN is given for two channels.





In case of each LDN is different as a separate LDN is given for each channel.

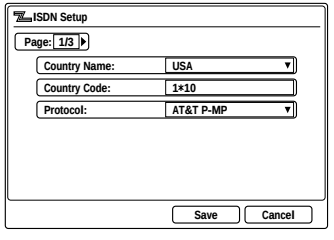


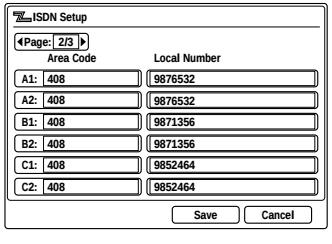


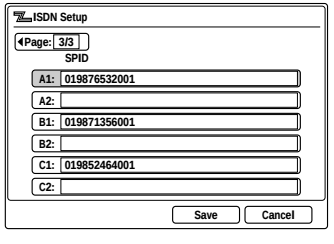
(Continued)

SPID Registration for Customers in the USA

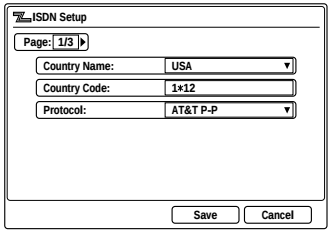
If the network switch type is AT&T 5ESS (Multipoint Custom ISDN)
The following shows the use of three ISDN lines.

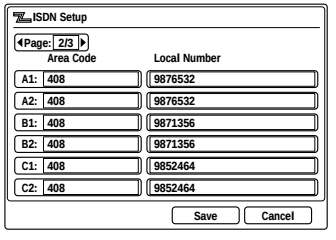


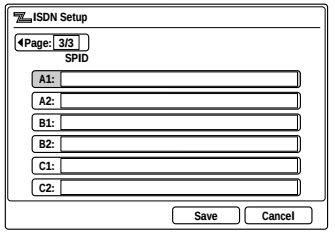




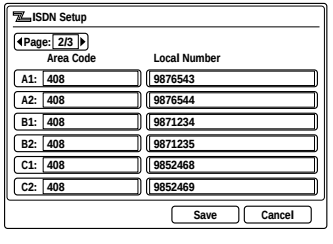
If the network switch type is AT&T 5ESS (Point-to-Point Custom ISDN)
You do not have to enter SPID.
The following shows the use of three ISDN lines.

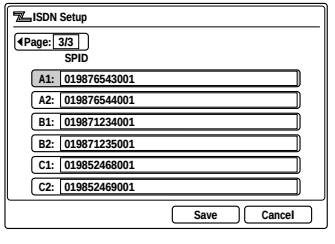




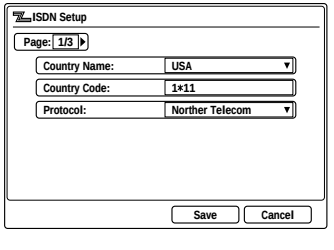


If the network switch type is NTI DMS-100 (National ISDN)
The following shows the use of three ISDN lines.



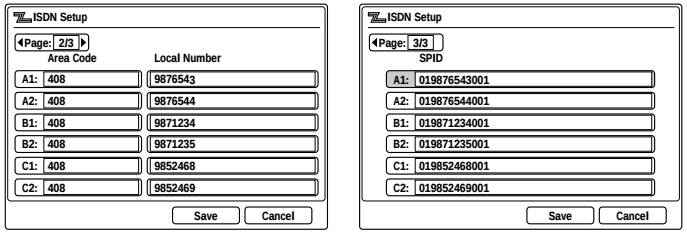


If the network switch type is NTI DMS-100 (Custom ISDN)
The following shows the use of three ISDN lines.



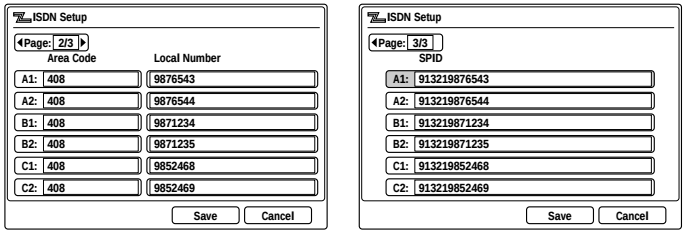
(Continued)

SPID Registration for Customers in the USA



You should let the remote party user know the contents of your LDN. The remote party dial list and the LDN should be kept in pairs.

The following shows a setup using three ISDN lines.



6 Select Save with the joystick on the Remote Commander, then press the joystick.

7 Select OK with the joystick on the Remote Commander, then press the joystick.

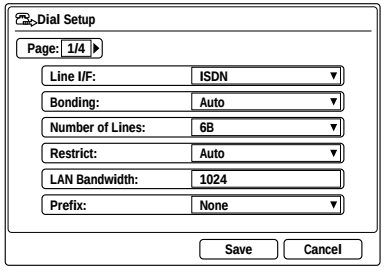
The registration is complete.

Menu Items in the Setup Menu

Dial Setup Menu

Sets up the attribute for calling.

Page 1



Line I/F: Selects the line interface.
- **ISDN:** Connects to a TV conferencing system via the normal ISDN line.
- **Telephone:** Connects to a phone to have a voice meeting via the normal ISDN line.
- **V.35:** Connects to a TV conferencing system via the V.35 interface. (Option)
- **LAN:** Connects to a TV conferencing system using a LAN. (Option)

Bonding: Selects whether to use the Inverse Multiplexer interface or not.
"Bonding (Bandwidth on Demand Interoperability Group)" is a trademark of THE BONDING CONSORTIUM.
- **Auto:** Normally, select this setting.
- **On:** Connects to a remote party via the Inverse Multiplexer interface.

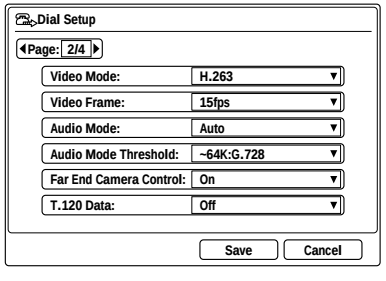
Number of Lines: Selects the number of lines usable for BONDING calling.
- **1B:** Connects via 1B channel.
- **2B:** Connects via 2B channels.
- **3B:** Connects via 3B channels.
- **4B:** Connects via 4B channels.
- **5B:** Connects via 5B channels.
- **6B:** Connects via 6B channels.

(Continued)

Restrict: Selects the transfer rate via the ISDN line.
Auto: Normally, select this setting.
56K: Selects this setting when you call a region or country via the 56 Kbps transfer rate.
LAN Bandwidth: Sets up the bandwidth of a LAN. This item can be set between 1 and 1024K.
Prefix: Selects the prefix number setting from the following.
None: Does not use the prefix number.
Prefix-A: Uses the setting A set in the Dial Setup menu.
Prefix-B: Uses the setting B set in the Dial Setup menu.
Prefix-C: Uses the setting C set in the Dial Setup menu.

For details on setting the prefix, see page 92.

Page 2



Video Mode: Selects the protocol for the video encoding.
H.261: Sends pictures based on Recommendation H.261 (When sending pictures using Annex D).
H.263: Sends pictures based on Recommendation H.263.
Video Frame: Selects the number of frames.
15fps: Sends pictures at a maximum rate of 15 frames per second.
30fps: Sends pictures at a maximum rate of 30 frames per second.

Audio Mode: Selects the protocol for the audio encoding.
G.728: The audio bandwidth is narrow but the image quality is better. (G.728: 3.4 kHz)
G.722: The audio bandwidth is wider for better sound quality. (7 kHz)
G.711: Select this setting when the remote system does not support neither G.722 nor G.723.
Auto: Automatically selects the audio encoding according to the number of used lines.
Audio Mode Threshold: Selects the setup of the Auto setting of Audio Mode.
–64K:G.728: Sets the Auto setting of Audio Mode to G.728 when the used-line is 1B channel and sets to G.722 when it is 2B channels or more.
–128K:G.728: Sets the Auto setting of Audio Mode to G.728 when the used-line is 2B channels or less and sets to G.722 when it is 3B channels or more.
–192K:G.728: Sets the Auto setting of Audio Mode to G.728 when the used-line is 3B channels or less and sets to G.722 when it is 4B channels or more.
Far End Camera Control: Selects whether to control the far end camera or not.
On: Operates the far end camera.
Off: Does not operate the far end camera.
T.120 Data: Selects whether to have a T.120 data meeting.
On: Holds a T.120 data meeting.
Off: Does not hold a T.120 data meeting.

Notes

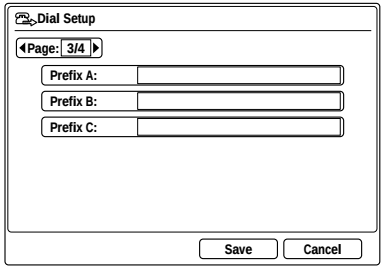
- When the optional V.35 Board is not installed, you cannot select V.35 from Line I/F.
- When the system is not upgraded using the optional PCS-UC161 Upgrade Kit, you cannot select LAN from Line I/F.

http://getMANUAL.com

Menu Items in the Setup Menu

Page 3

Enter “9” when you have to dial nine to reach an outside line.

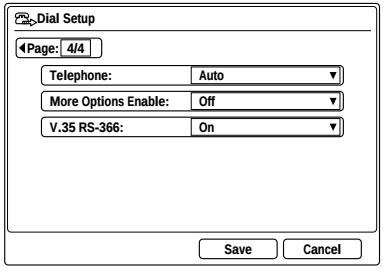


Prefix A: Sets up a prefix number that will be registered for Prefix-A in the Dial Setup menu.
Prefix B: Sets up a prefix number that will be registered for Prefix-B in the Dial Setup menu.
Prefix C: Sets up a prefix number that will be registered for Prefix-C in the Dial Setup menu.

Note

The number input in these boxes above is automatically dialed before the telephone number is dialed.

Page 4

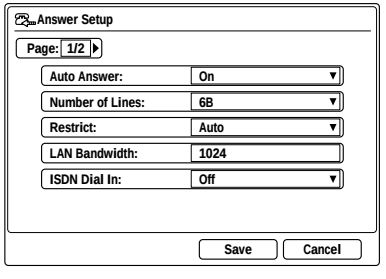


Telephone: Selects the audio protocol for the voice meeting.
Auto: Selects the protocol automatically.
G.711 μ-law: Selects the μ-law protocol.
G.711 A-law: Selects the A-law protocol.
More Options Enable: Selects whether to enable the dial attribute set in the Dial Setup menu for each dial list.
On: Enables the dial attribute for each dial list.
Off: Disables the dial attribute for each dial list.
V.35 RS-366: Selects whether to specify the telephone number when connecting via the V.35 interface.
On: When specifying the telephone number.
Off: When not specifying the telephone number.

Answer Setup Menu

Sets up the communication items for receiving.

Page 1



Auto Answer: Selects the answer mode.
- **On:** Answers calls in auto answer mode.
- **Off:** Answers calls in manual answer mode.

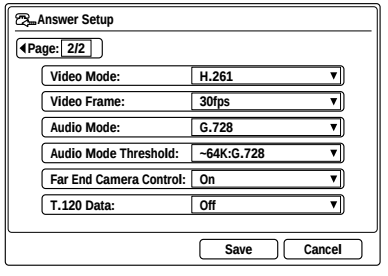
Number of Lines: Selects the number of lines usable for receiving.
- **1B:** Connects via 1B channel.
- **2B:** Connects via 2B channels.
- **3B:** Connects via 3B channels.
- **4B:** Connects via 4B channels.
- **5B:** Connects via 5B channels.
- **6B:** Connects via 6B channels.

Restrict: Selects the transfer rate via the ISDN line.
- **Auto:** Normally, select this setting.
- **56K:** Selects this setting when you call a region or country via the 56 Kbps transfer rate.

LAN Bandwidth: Sets up the bandwidth of a LAN. This item can be set between 1 and 1024K.

ISDN Dial In: Selects whether you are using the Multiple Subscriber Number.
- **On:** When you are using the Multiple Subscriber Number.
- **Off:** When you are not using the Multiple Subscriber Number.

Page 2



Video Mode: Selects the protocol for the video encoding.
- **H.261:** Receives pictures based on Recommendation H.261.
- **H.263:** Receives pictures based on Recommendation H.263.

Video Frame: Selects the number of frames.
- **15fps:** Receives pictures at a maximum rate of 15 frames per second.
- **30fps:** Receives pictures at a maximum rate of 30 frames per second.

Audio Mode: Selects the protocol for the audio encoding.
- **G.728:** The audio bandwidth is narrow but the image quality is better. (G.728: 3.4 kHz)
- **G.722:** The audio bandwidth is wider for better sound quality. (7 kHz)
- **G.711:** Does not use G.722 and G.728.

Audio Mode Threshold: Selects the setup of the Auto setting of Audio Mode.
- **–64K:G.728:** Sets the Auto setting of Audio Mode to G.728 when the used-line is 1B channel and sets to G.722 when it is 2B channels or more.
- **–128K:G.728:** Sets the Auto setting of Audio Mode to G.728 when the used-line is 2B channels or less and sets to G.722 when it is 3B channels or more.
- **–192K:G.728:** Sets the Auto setting of Audio Mode to G.728 when the used-line is 3B channels or more and sets to G.722 when it is 4B channels or more.

Far End Camera Control: Selects whether the near end camera is controled or not.
- **On:** Operates the near end camera.
- **Off:** Does not operate the near end camera.

T.120 Data: Selects whether to have a T.120 data meeting.
- **On:** Holds a T.120 data meeting.
- **Off:** Does not hold a T.120 data meeting.

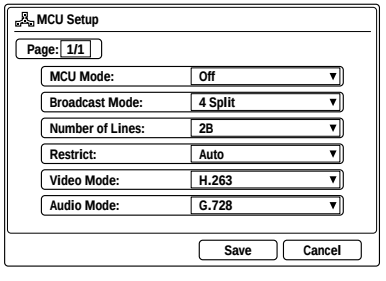
Menu Items in the Setup Menu

MCU Setup Menu

When you have upgraded the system using the optional PCS-UC160 Upgrade Kit and hold an MCU conference, set up the MCU Setup menu.

Note

The MCU Setup menu is displayed only when the system has been upgraded using the optional PCS-UC160 Upgrade Kit.



MCU Mode: Set to On when holding a point to multi-point meeting.
- **On:** Holds a Point to multi-point meeting.
- **Off:** Holds a normal meeting.

Broadcast Mode: Selects the broadcast mode.
- **4 Split:** Displays each party on the four-split screen.
- **Voice:** Detects the terminal that speaks at the highest level among the connected terminals, and sends the picture to all the terminals.

Number of Lines: Selects the number of lines to be used.
- **1B:** Connects via 1B-channel.
- **2B:** Connects via 2B-channel.

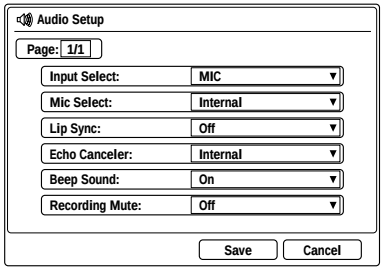
Restrict: Selects the transfer rate via the ISDN line.
- **Auto:** Connects to a remote party with a normal ISDN line.
- **56K:** Selects this setting when you call a region or country via the 56 Kbps transfer rate.

Video Mode: Selects the protocol for the video encoding.
- **H.261:** When connecting with the protocol based on H.261.
- **H.263:** When connecting with the protocol based on H.263.

Audio Mode: Selects the protocol for the audio encoding.
- **G.728:** The audio bandwidth is narrow but the image quality is better. (3.4 kHz)
- **G.722:** The audio bandwidth is wider for better sound quality. (7 kHz)
- **G.711:** When not using G.722 and G.728.

Audio Setup Menu

Sets up the audio system.



Input Select: Selects the audio input.
- **MIC:** The microphone is selected.
- **AUX:** The external equipment is selected.
- **MIC+AUX:** Both the microphone and the external equipment are selected.

Mic Select: Selects the microphone to be used.
- **Internal:** Uses the built-in microphone.
- **External:** Uses the optional PCS-A300 Microphone (s).

Lip Sync: Selects whether you use the lip synchronization function.
- **On:** Activates the lip synchronization function.
- **Off:** Deactivates the lip synchronization function.

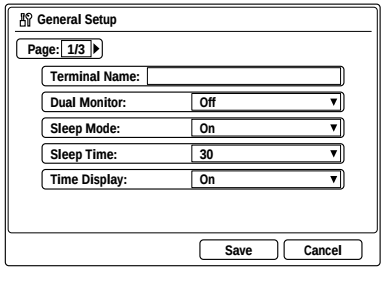
Echo Canceler: Selects whether you use the echo canceler inside the Compact Processor.
- **Internal:** Activates the built-in echo canceler.
- **External:** When using the echo canceler equipped with the external equipment.
- **Off:** Deactivates the echo canceler.

(Continued)

Beep Sound: Selects whether to sound the beep when you press the buttons on the Remote Commander.
On: Activates the beep sound.
Off: Deactivates the beep sound.
Recording Mute: Selects whether to output the audio from the AUDIO OUT (MIXED) jack.
On: Does not output the audio.
Off: Outputs the audio.

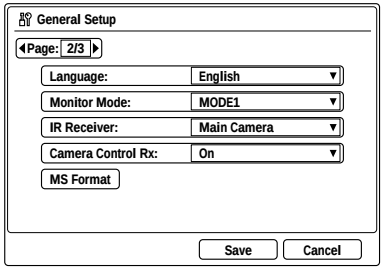
General Setup Menu

Page 1



Terminal Name: Enter the terminal name to be reported to an external MCU.
Dual Monitor: Select whether to use the dual-monitor function.
On: Activates the dual-monitor function.
Off: Deactivates the dual-monitor function.
Sleep Mode: Select whether to turn into sleep mode.
On: Turns into sleep mode.
Off: Does not turns into sleep mode.
Sleep Time: Specifies the time to turn into sleep mode. This is set between 1 to 99 minutes.
Time Display: Selects whether to display the elapsed time.
On: Displays the elapsed time.
Off: Does not display the elapsed time.

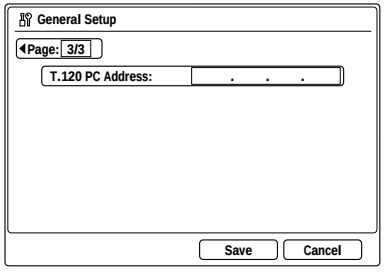
Page 2



Language: Selects the language of the messages.
English: Displays messages in English.
French: Displays messages in French.
Germany: Displays messages in German.
Japanese: Displays messages in Japanese.
Spanish: Displays messages in Spanish.
Italian: Displays messages in Italian.
Monitor Mode: Selects the remote control mode of the IR repeater. Normally, set it to MODE1 (PCS-1600) or to MODE3 (PCS-1600P).
MODE1: Sets it to mode 1.
MODE2: Sets it to mode 2.
MODE3: Sets it to mode 3.
MODE4: Sets it to mode 4.
IR Receiver: Selects the remote sensor. Normally, set it to Main Camera.
Main Camera: Activates the remote sensor on the camera.
Body: Activates the remote sensor on the Compact Processor.
Camera Control RX: Selects whether to ignore the camera control commands from the far end.
On: Does not ignore the camera control commands.
Off: Ignores the camera control commands.
MS Format: Formats the “Memory Stick.”

Menu Items in the Setup Menu

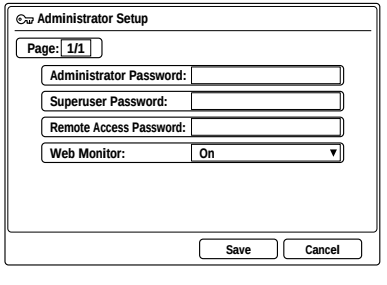
Page 3



T.120 PC Address: Input the IP address of the PC used for the T.120 data conference.

Administrator Setup Menu

This menu is only for an administrator. If you set your password, the password is necessary to modify the Setup and Phone Book menus. Also, the password is necessary to access the Administrator Setup Menu.



Adminstrator Password: Sets the password for the administrator. This password is necessary to modify the Setup and Phone Book menus.
Superuser Password: Sets the password for the superuser. This password is necessary to modify the Phone Book menu.
Remote Access Password: Sets the password to access from the Web. The password for administrator or superuser can also be used to access from the Web.

Web Monitor: Selects whether or not the Web monitoring function is used from the Web.
On: Gives permission for viewing the JPEG images from the Web.
Off: Does not give permission for viewing the JPEG images from the Web.

ISDN Setup Menu

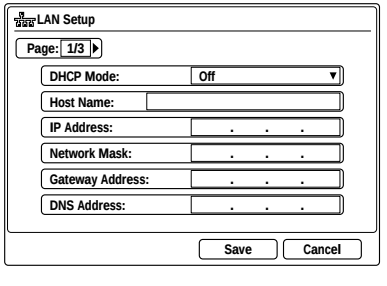
Sets up the ISDN attribute. See page 78 for details.

LAN Setup Menu

When you hold a meeting on a LAN, upgrade the system using the optional PCS-UC161 Upgrade Kit, and set up the LAN Setup menu.

For details on the setup below, consult a person having charge of your network.

Page 1

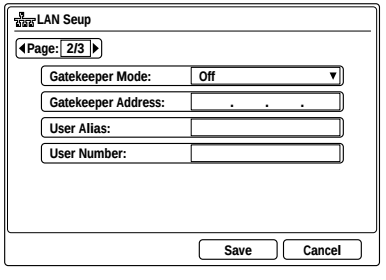


DHCP Mode: Sets up the DHCP (Dynamic Host Configuration Protocol).
Auto: Automatically gets your IP address and network mask. Check your IP address on the Machine Information menu after you get them.
Off: Sets DHCP to OFF. When set to OFF, enter your IP address and network mask.

(Continued)

Host Name: Enter your host name.
IP Address: Enter your IP address.
Network Mask: Enter your network mask.
Gateway Address: Enter your default gateway address.
DNS Address: Enter your DNS (Domain Name System) server address.

Page 2

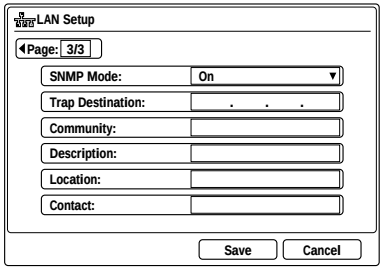


Gatekeeper Mode: Sets up whether you use the gatekeeper or not.
On: Uses the gatekeeper.
Off: Does not use the gatekeeper.
Auto: Automatically detects the gatekeeper and use it.
Gatekeeper Address: Enter your gatekeeper address.
User Alias: Enter your user alias address (H.323 alias) on the gatekeeper.
User Number: Enter your user number (E.164 number) on the gatekeeper.

Note

The LAN Setup menu (Page 2) is accessed only when the system has been upgraded using the optional PCS-UC161 Upgrade Kit.

Page 3

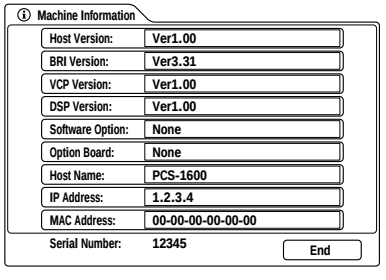


SNMP Mode: Sets up whether the SNMP agent service is effective or not.
On: Sets the SNMP agent service effective.
Off: Sets the SNMP agent service ineffective.
Trap Destination: Enter your SNMP administrator address where you send the trap.
Community: Enter your community name that managed by the SNMP administrator. “public” has been entered as the default. Normally, you do not need to change this item.
Description: Enter the description of the unit. “Videoconference Device” has been entered as the default. You cannot change this item.
Location: Enter the location you install this unit.
Contact: Enter information on your administrator who manages this unit.

Menu Items in the Setup Menu

Machine Information Menu

Displays the version and installed option of the Compact Processor



Host Version: Displays the software version.
BRI Version: Displays the BRI version.
VCP Version: Displays the VCP version.
DSP Version: Displays the audio DSP version.
Software Option: Displays the optional software installed into the unit.
- **None:** The optional software has not been installed.
- **MCU:** The PCS-UC160 Upgrade Kit has been installed.
- **H.323:** The PCS-UC161 Upgrade Kit has been installed.
- **MCU, H.323:** The PCS-UC160/UC161 Upgrade Kits have been installed.

Option Board: Displays the optional board installed into the unit.
- **None:** The optional board has not been installed.
- **2BRI:** The PCS-I160 BRI Board has been installed.
- **V.35:** The PCS-I161 V.35 Board has been installed.

Host Name: Displays the host name (Only when the PCS-UC161 Upgrade Kit has been installed).
IP Address: Displays the IP address (Only when the PCS-UC161 Upgrade Kit has been installed).
MAC Address: Displays the MAC address.
Serial Number: Displays the serial number.

Chapter 5

Meetings With Optional Equipment

Installing the Optional Board

You need to install the optional board to connect via three ISDN lines or via the V.35 interface.

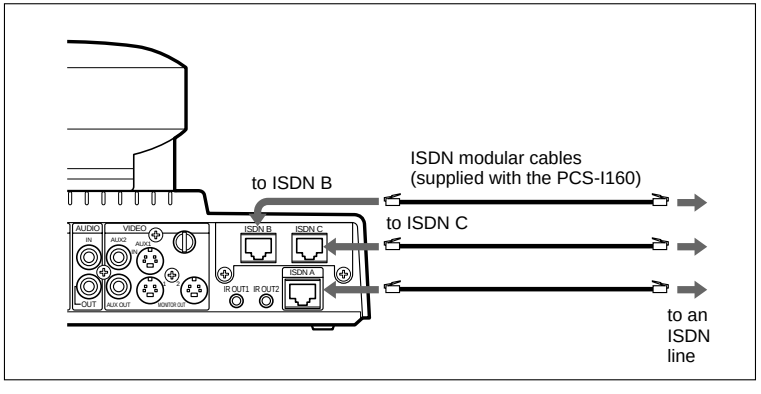
For details on the installation of optional Boards, consult your Sony dealer.

Board	Function
PCS-I160 BRI Board	Connects via three ISDN lines. When using this unit that has been upgraded with the PCS-UC160 as the MCU (Multipoint Control Unit), this board is required.
PCS-I161 V.35 Board	Connects via the V.35 interface.

Installing the Optional Board

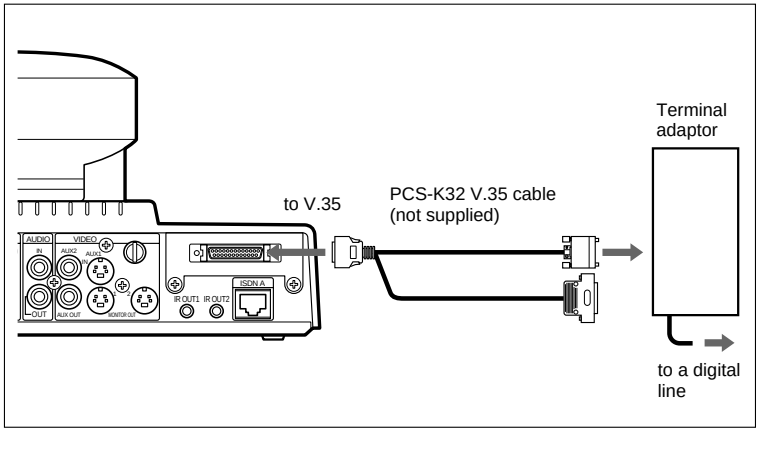
Using Three ISDN Lines

You need to install the optional PCS-I160 BRI Board. You can connect with 6B channels.



Using the V.35 Interface

You need to install the optional PCS-I161 V.35 Board. You can connect via the V.35 interface.



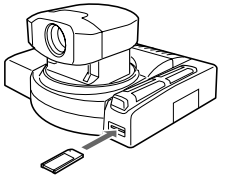
Upgrading the Software

Follow the procedure below to upgrade the software.

To install the Upgrade Kit

1 Insert the “Memory Stick” into the Memory Stick slot.

Insert it in the arrow mark direction with the mark faced upward.



2 Turn on the Compact Processor.

After the upgrade is complete, the launcher menu appears.

Note

Do not turn off the power or eject the “Memory Stick” before the launcher menu appears.

3 Push the “Memory Stick” inward, then release your finger.

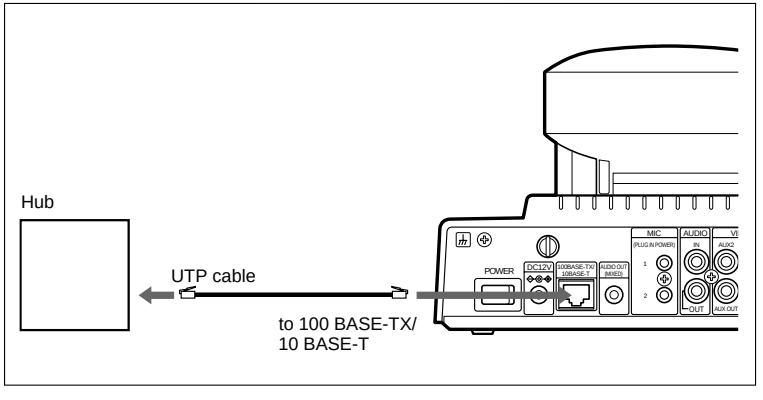
The “Memory Stick” comes out a little.

4 Open the Machine Information menu to check upgrading is complete.

5 Stick the serial number sticker to the bottom of the Compact Processor.

Connection using a LAN

You need to upgrade the system using the optional PCS-UC161 Upgrade Kit. You can connect on a LAN. Use the UTP (Unshielded Twisted Pair) category 5 cable.

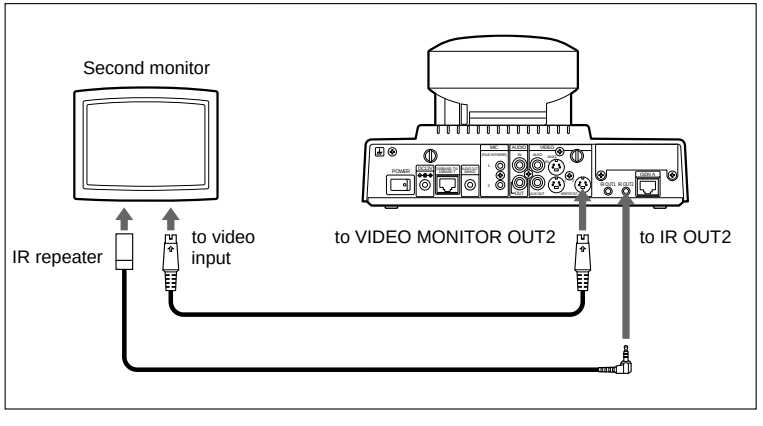


Using Dual Monitors

You can use two monitors during a meeting, one for moving pictures and the other for still pictures.

To connect a TV monitor for the dual monitor function

Connect the second TV monitor (for dual monitor function) to the VIDEO MONITOR OUT2 jack on the Compact Processor. The first TV monitor then becomes the monitor for viewing motion pictures. Insert the IR repeater below the remote sensor of the TV monitor.



To enable the dual monitor function

Set Dual Monitor to On in the General Setup menu. The default setting is Off.

For details on the Dual Monitor item, see "General Setup menu" on page 98.

Using Optional Microphones

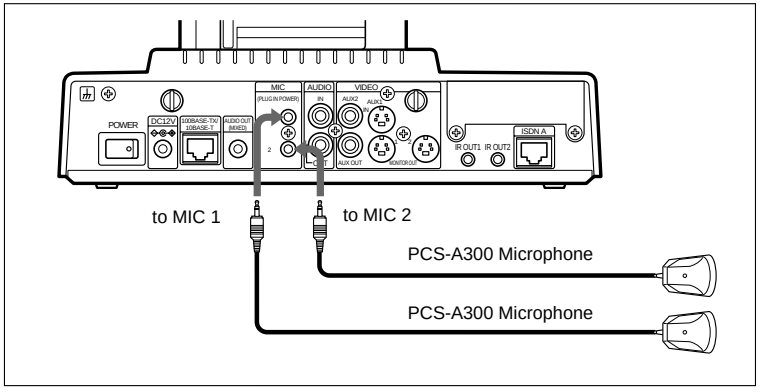
The Compact Conference Package is designed to accommodate three participants at one terminal. You can add the optional PCS-A300 Microphones to allow for more participants.

Notes

- Set Mic Select to External in the Audio Setup menu.
- The built-in microphone is not activated after connecting the external microphone.

Connecting the Microphone

You can add two microphones. Power for the microphone is provided from the Compact Processor.



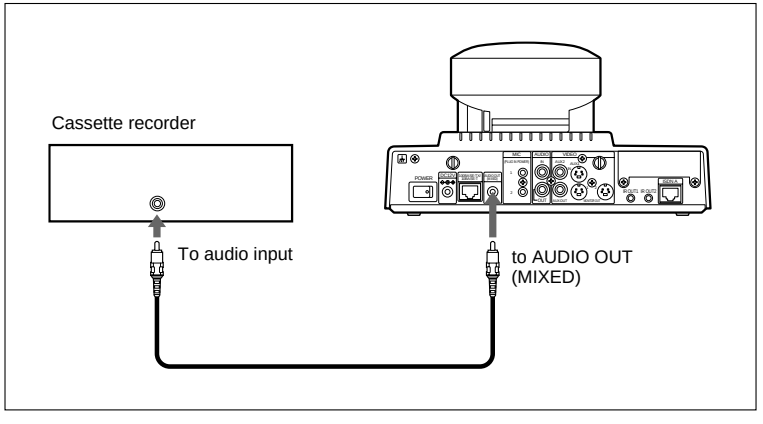
Notes on installing the PCS-A300 Microphone

- Install the microphone at a half meter apart from participants.
- Install the speaker in direction of the rear of the microphones.
- Install the microphone in a quiet, echo-free room.
- Install the microphone away from potential noise sources.
- Do not place a sheet of paper over the microphone or move the microphone since reflecting echoes to a remote party may increase temporarily. It needs an input audio signal for a couple of seconds to settle down the reflecting echoes.

Recording the Meeting Audio

You can record the audio during a meeting. Connect a cassette recorder to the AUDIO OUT (MIXED) jack. You can record both local and remote audios, or only record remote audios. When you record both local and remote audios, set Recording Mute to On in the Audio Setup menu. When you only record remote audios, set it to Off.

For details on Recording Mute, see "Audio Setup menu" on page 97.



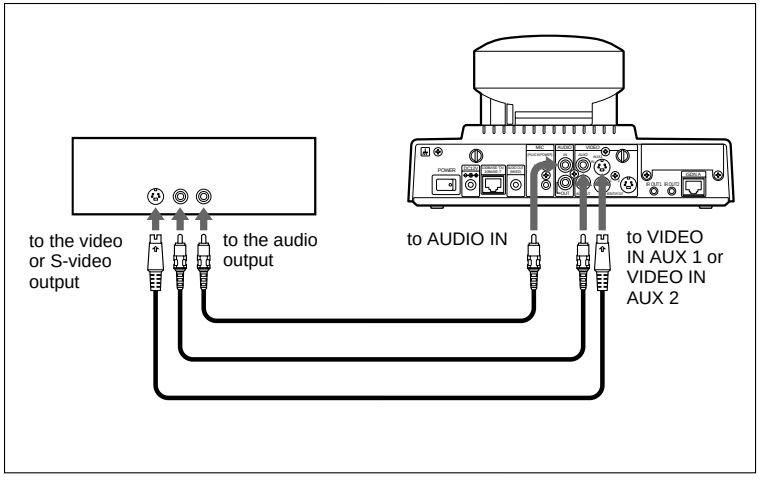
http://getMANUAL.com

Using the External Equipment

The Compact Processor can connect two external video equipment for input; two equipment for output (including the TV monitor).

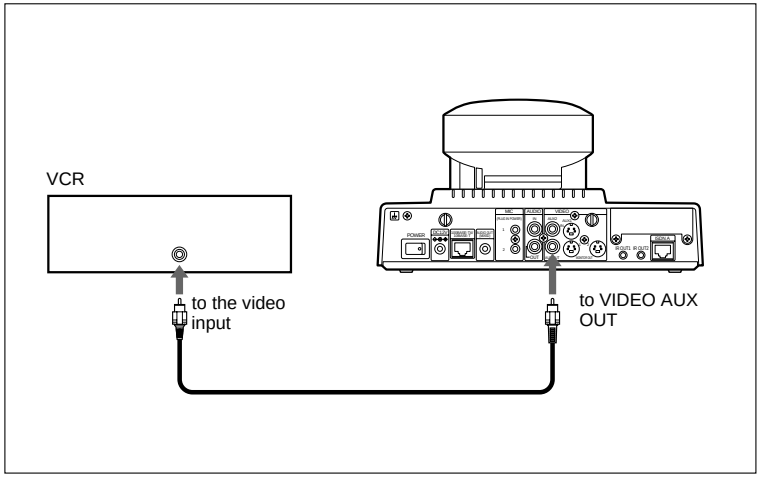
Connecting External Video Equipment for Input

Connect video equipment, such as a VCR. The system is equipped with two video inputs and one audio input.



Connecting External Equipment for Output

You can connect external video equipment for output, such as a VCR, besides the TV monitor.



Holding a T.120 Data Conference

You can have a data conference based on ITU-T Recommendation, T.120 standards when you connect a PC which NetMeeting (not supplied) has been installed with the Compact Processor.

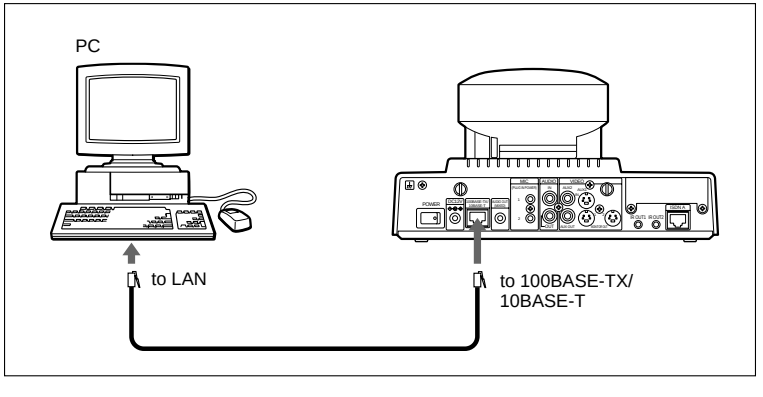
NetMeeting is a registered trademark of Microsoft Corporation.

Notes

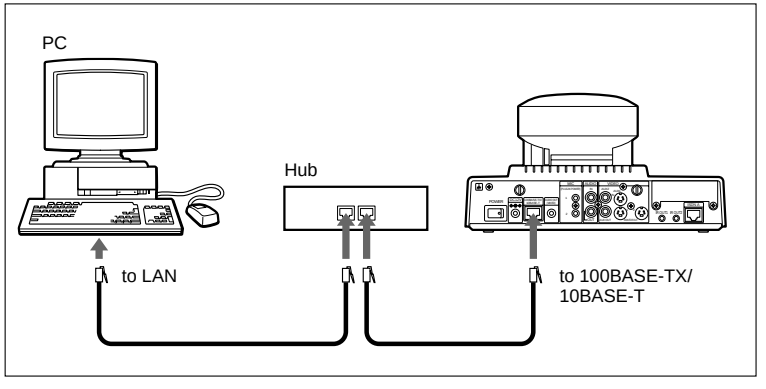
- When you have upgraded the system using the optional PCS-UC161 Upgrade Kit, and using on a LAN, you cannot hold a T.120 data conference.
- When you use the Compact Processor as the MCU, you cannot hold a T.120 data conference.

Connecting With a PC

Connect the LAN port of your PC and the 100BASE-TX/ 10BASE-T on the Compact Processor using the category 5 UTP cross cable.



When you use a Hub, connect as follows using straight cables.



To install NetMeeting

Install NetMeeting in your PC following the procedure.

Setting Up the Compact Processor

Enter the IP address of your PC in which NetMeeting is installed into the T.120 PC Address box in the General Setup menu.

When you call a remote party to hold a data conference
Set T.120 Data to On in the Dial Setup menu.

When you receive a call from a remote party to hold a data conference
Set T.120 Data to On in the Answer Setup menu.

Note

We recommend to set Audio Mode to G.728 in the Dial Setup menu.

Holding a T.120 Data Conference

Connecting with NetMeeting

1 Select [NetMeeting] from the start pop-up menu or click on the NetMeeting icon.

2 Set the Compact Processor to be on line.

Check that the indication T.120 appears on the screen.

3 Click on [Calling] at both local or remote.

4 Enter the IP address of the Compact Processor into [Address].

5 Click on the [Call] button.

Soon, the connection is established.

For details on how to use, refer to the NetMeeting Help menu.

On data transfer rate
The Compact Processor is compatible with the following transfer rate: MLP 6.4 Kbps, 24 Kbps, 32 Kbps, and HMLP 62.4 Kbps.

Chapter 6

Meetings With the Upgrade Kit

Features

The optional PCS-UC160 Upgrade Kit is designed to add the MCU function to the PCS-1600/1600P Compact Conference Package.
You can hold an MCU conference based on the ITU-T Recommendation, H.231 standard.

Note
The PCS-I160 BRI Board is also required for holding a point to multi-point meeting. (However, you can only install the MCU function without the PCS-I160 BRI Board.)

Starting a Point to Multi-Point Meeting

You can hold a point to multi-point meeting among four terminals (including this terminal). You can add one normal audio phone in the network.

Note

Before you start a meeting verify that MCU Mode is set to On in the MCU Setup menu.

For details on registration on the Phone Book menu, see "Registering a Remote Party" on page 71.

Calling Remote Parties

To call registered remote parties

1 Press the PHONE BOOK button on the Remote Commander.

The Phone Book menu appears on the monitor screen.

2 Select an index (the first remote party) with the joystick on the Remote Commander.

3 Select Dial with the joystick on the Remote Commander, then press the joystick. Or press the CONNECT/DISCONNECT (☎/⏏) button on the Remote Commander.

The system dials the selected remote party in step **2**, and the indication "Dialing" appears on the monitor screen. When the connection is completed, the indication "MEETING STARTS!" appears on the monitor screen.

4 Repeat steps **1** to **3** to connect with the second and third parties.

Note

When connecting to the remote party that is set to be connected via 3B-channel or more, the system only dials the number in the A1 box, or the ones in the A1 and A2 boxes.

To call unregistered remote parties

1 Select Manual Dial with the joystick on the Remote Commander in the launcher menu, then press the joystick.

The Manual Dial menu appears on the monitor screen.

2 Enter the telephone number of the first remote party to have a meeting with in the A1 and A2 boxes (when Number of Lines is set to 1B, only in the A1 box).

3 Select Dial with the joystick on the Remote Commander, then press the joystick. Or press the CONNECT/DISCONNECT (☎/⏏) button on the Remote Commander.

The system dials the number that is input in step **2**, and the indication "Dialing" appears on the monitor screen. When the connection is completed, the indication "MEETING STARTS!" appears on the monitor screen.

4 Repeat steps **1** to **3** to connect the second and third parties.

To hold a meeting with registered remote parties and unregistered parties mixed

Follow steps **1** to **3** of "To call registered remote parties" and steps **1** to **3** of "To call unregistered remote parties" according to whether the party is registered.

Receiving Calls

The procedure is same as a normal meeting.

For details on the procedure, see "Receiving a Call" on page 42.

Starting a Point to Multi-Point Meeting

Notes on Point to Multi-Point Meetings

See also “The Attribute” on page 127.

- The chair control is only available from this terminal. Remote parties cannot operate it.
- This system does not support multiplex MCU connections.
- The number of lines is set to two when Number of Lines is set to 2B; is set to one when set to 1B. This is regardless of the setting in the Dial Setup menu.
- One ISDN jack can connect with only one terminal. Even if you connect via 1B-channel, the number of remote parties is up to three.
- This system does not support connections via the Inverse Multiplexer interface (BONDING).

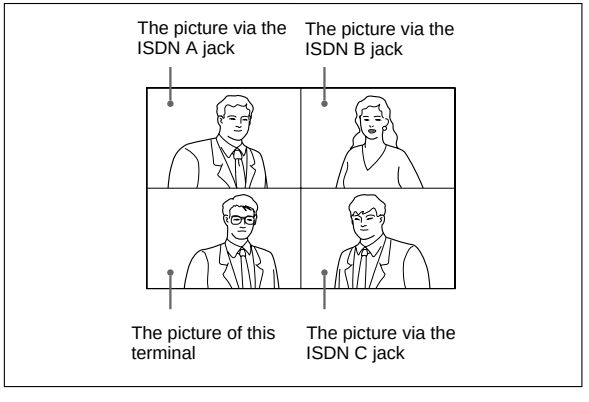
Operating Chair Controls

You can do the following operations during a meeting.

Switching the Broadcast Mode

There are two broadcast modes:

4 Split mode
Displays each party on the four-split screen.

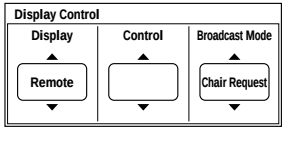


Voice Active mode
Detects the terminal that speaks at the highest level among the connected terminals, and sends the picture to all the terminals.
The indication ▦ appears at the lower-left on the monitor screen in Voice Active mode.
The indication V.A appears on the monitor screen in Voice Active mode.

The default broadcast mode when starting a meeting is according to the setting in the MCU Setup menu.

1 Press the FAR/NEAR button on the Remote Commander.

The Display Control menu appears.



(Continued)

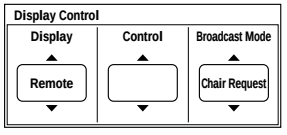
2 Select 4 Split or Voice Active from Broadcast Mode with the joystick on the Remote Commander, then press the joystick.

Each time you select the setting, the mode is switched between the 4 Split mode and the Voice Active mode.

Selecting the Picture to be Broadcast

You can manually select the picture to be broadcast. Once you select the picture, both the broadcast modes are canceled, and the selected picture is displayed on each screen at full-size.

Select the desired terminal number from Terminal with the joystick on the Remote Commander, then press the joystick.



The picture from the selected terminal is broadcast.

The alphabet A, B, or C is added on the indication ▣. This indicates the terminal being broadcast. The indication ▣ without the alphabet indicates that the picture of the local terminal is being broadcast.

To go into broadcast mode

Select 4 Split or Voice Active from Broadcast Mode with the joystick on the Remote Commander, then press the joystick. The system returns to the 4 Split mode or the Voice Active mode.

Verifying the Picture Shot by the Local Camera

You can display the local picture only on your screen in Voice mode; the other terminals are still in Voice mode.

Press the FAR/NEAR button on the Remote Commander. The local picture is displayed only on your screen.

To return to the Voice mode

Press the FAR/NEAR button on the Remote Commander again.

Receiving the Broadcast Request

When you receive the command “MCV*” from the connected terminal, the picture of that terminal is automatically broadcast. If the meeting is held in Voice mode, the mode is canceled, and the picture is broadcast at full-size.
When you receive the command “MCV CANCEL,” the system returns to the previous mode.

*One of the commands that is sent to the MCU from the slave terminal.

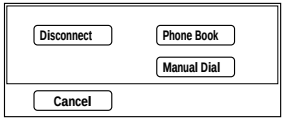
Note

If you have received the command “MCV” from other terminal, or you have manually selected the picture to be broadcast, the command “MCV” is rejected.

Ending a Point to Multi-Point Meeting

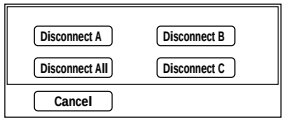
1 Press the CONNECT/DISCONNECT (☎/🕿) button on the Remote Commander.

The following menu appears on the monitor screen.



2 Select Disconnect with the joystick on the Remote Commander, then press the joystick.

The screen changes to the four-split screen, and the following menu appears on the monitor screen.



3 **To disconnect a selected terminal**
Select the number to be disconnected with the joystick on the Remote Commander, then press the joystick.

The selected terminal is disconnected.

To disconnect all the terminals
Select Disconnect All with the joystick on the Remote Commander, then press the joystick. Or press the CONNECT/DISCONNECT (☎/🕿) button on the Remote Commander again.

All the terminals are disconnected.

To cancel the disconnection

Select Cancel with the joystick in step **3**, then press the joystick.

Notes on Secondary Terminals

If the terminal that is not adequate for the setting on this system is connected, this terminal is called as the secondary terminal. When the secondary terminal is connected, some of the function is limited as follows:

When a normal phone is connected

You can connect only one normal audio phone in the network. If two phones try to connect, the system will disconnect its line or reject the call.
The audio mode of the other terminals is not influenced:
• Once a phone is connected.
• After the normal phone ends a meeting.

When the slave terminals via 1B-channel and 2B-channel are mixed when Number of Lines is set to 2B

Holds a meeting via 2B-channel with the 2B-channel terminals and via 1B-channel with the 1B-channel terminals. The meeting with the 1B-channel terminals is as follows:
• Send/receive the audio.
• Receive the video.
If 2B-channel terminals end a meeting, and only 1B-channel terminals are in the network, the meeting holds via 1B-channel. This 1B-channel meeting can send/receive the audio and video.

When holding a meeting in the 64 K network, the 56 K terminal is connected

The system automatically changes the transfer rate to 56 Kbps. The slave terminal that cannot change the rate becomes the secondary terminal.
The meeting with the secondary terminal is as follows:
• Send/receive the audio.
• Receive the video.

When the different audio mode terminal is connected, and the video mode is different

The system automatically changes the video rate to the lowest one. The slave terminal that cannot change the video rate becomes the secondary terminal.
The meeting with the secondary terminal is as follows:
• Send/receive the audio.
• Receive the video.

Chapter 6

Notes on Secondary Terminals

When the terminal whose video rate is lower is connected

Broadcasts the picture to all the terminals with the lowest frame rate in the network.

When the terminal whose video mode is only QCIF is connected

Does not broadcast the picture to the QCIF terminal.

When Video Mode is set to H.263

The H.263 mode is only available when all the terminals are in H.263 mode. If there is a terminal in H.261 mode, the meeting will be held in H.261 mode.

The Attribute

Number	Attribute	Value
1	Maximum number of terminals that can be connected to a single MCU	3 (4 when including this terminal)
2	Maximum number of concurrent (independent) conferences that can be supported in a single MCU	1
3	Maximum number of ports that can be connected to other MCUs	0
4.1	Network interfaces at each port	BRI
4.2	Restricted network capability	Restrict_Required
5	Transfer rates available at each port	2B, 1B
6	Audio Processor	Equipped
6.1	mixed/switched noise/echo suppression on “silent” ports	Mixed No
6.2	audio algorithm at each port	G.711, G.728, G.722
7	Video Processor (moving pictures)	Equipped
7.1	switched/mixed	Voice activate/four-split/user control
7.2	video algorithm at each port	H.261, H.263
8	Data Processor	No
8.1	data broadcast facility, LSD data broadcast facility, HSD	No No
8.2	MLP Processor	No
9	Encryption	Not support
10	Method of choosing Selected Comm Mode - SCM	Set with users: ISDN rate (1B/2B), audio (G.711/G.722/G.728) Auto: Video frame rate (7.5/10/15 fps), video encoding mode (CIF/QCIF) ISDN transfer rate can be selected from 56 Kbps or automatic with users. Video mode (H.261/H.263) can be selected from H.261 or automatic (H.261/H.263) with users.
11	Can deal with secondary terminals	Audio: send/receive Video: receive
12	Call set-up provision(s)	No call/receive reservation
13	Control capabilities	–
13.1	Numbering of terminals Simple chair control using BAS	No No
13.2	MLP facilities [refer to ITU-T T series]	No No

(Continued)

The Attribute

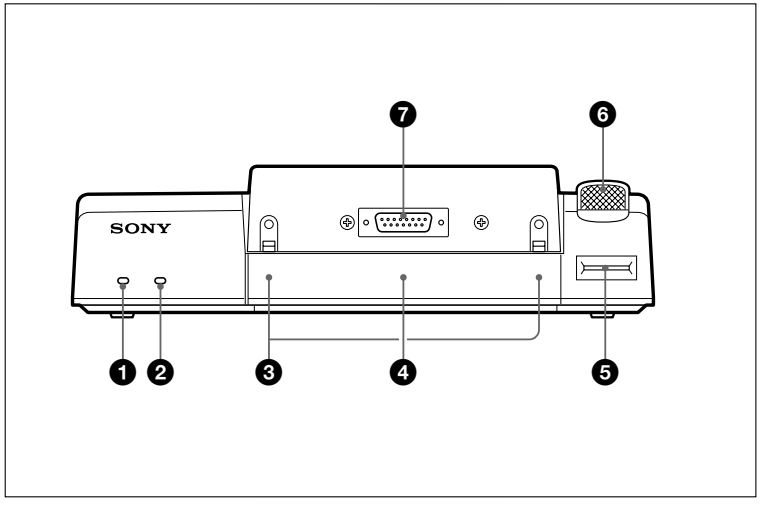
Number	Attribute	Value
13.3	H.224 (simplex data)	No
14	Cascading	No
14.1	Fixed rates (“simple”)	No
14.2	Master/Slave	No
15	Terminal identification	No
16	MBE capability Register necessary information such as the telephone number and index number.	No

Appendix

Location and Function of Parts and Controls

Compact Processor

Main unit (front)



(Continued)

❶ POWER lamp (green)
When you set the POWER switch to on, this lamp lights up. This lamp goes off when the system is on standby, or flashes when the system is in sleep mode.

❷ STANDBY lamp (orange)
This lamp lights up when the system is on standby. This lamp goes off when the system is in sleep mode.

❸ IR (Infrared) sensor
Detects the infrared video signal emitted from the optional PCS-DS150/DS150P Document Stand. The infrared video input via this sensor is assigned as Object.

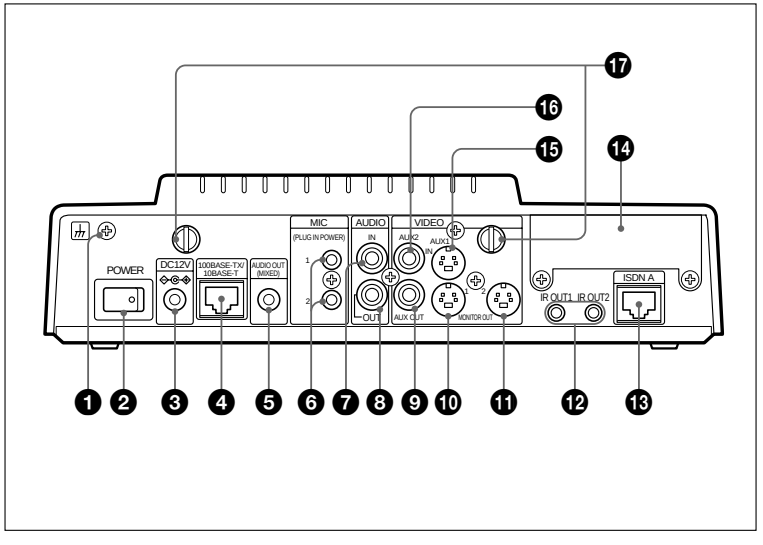
❹ Remote sensor
When operating the Compact Processor with the Remote Commander, point it toward this sensor.
If you use this sensor, set IR Receiver to Body in the General Setup menu. This is set to Main Camera at factory.

❺ "Memory Stick" slot
Insert a "Memory Stick" into this slot.

❻ Microphone

❼ CAMERA connector
Connect to the camera.

Main unit (rear)



❶ ⏚ Terminal
Connect the earthing wire to this terminal.

❷ POWER switch
Switch the Compact Processor to on/off.

❸ DC 12V jack
Connect the supplied PCS-AC15 AC adaptor to this jack.

❹ 100BASE-TX/10BASE-T jack (8-pin modular)
Connect another Compact Processor to this jack when holding a meeting on a LAN.

❺ AUDIO OUT (MIXED) jack (phono jack)
Connect to an audio input jack of a VCR to minute a meeting.

❻ MIC1/MIC2 jacks/PLUG IN POWER (phono jack)
Connect the optional PCS-A300 Microphone(s) to these jacks. These provide the power supply to the microphone(s) connected to these jacks.

❼ AUDIO IN jack (phono jack)
Connect to the audio output jack of the external equipment.

❽ AUDIO OUT jack (phono jack)
Connect to the audio input jack of the TV monitor.

(Continued)

http://getMANUAL.com

⑨ VIDEO AUX OUT jack (phono jack)
Connect to the video input jack of the external equipment.

⑩ VIDEO MONITOR OUT1 jack (mini DIN 4-pin)
Connect to the video input jack of the TV monitor.

⑪ VIDEO MONITOR OUT2 jack (mini DIN 4-pin)
Connect to the video input jack of the second TV monitor when using the dual monitor function.

⑫ IR OUT1/2 jacks (minijack)
Connect the supplied IR repeater to these jacks. Connect the IR repeater to the IR OUT1 jack for the monitor connected to the VIDEO MONITOR OUT1 jack and connect the IR repeater to the IR OUT2 jack for the monitor connected to the VIDEO MONITOR OUT2 jack.

⑬ ISDN A jack (8-pin modular)
Connect the ISDN line to this jack using the ISDN modular cable.

⑭ Interface board slot
Install the optional board into this slot.

⑮ VIDEO IN AUX 1 jack (mini DIN 4-pin)
Connect to the video output jack of the external equipment.

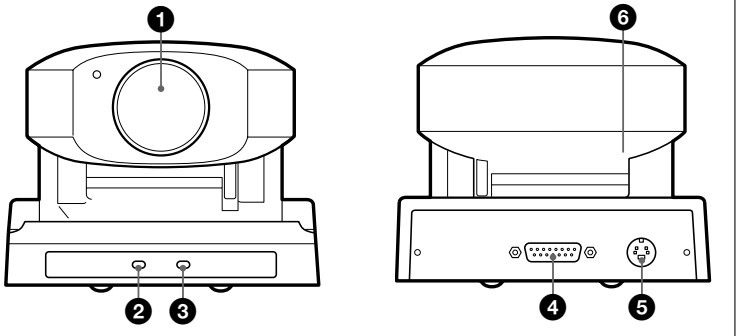
⑯ VIDEO IN AUX 2 jack (phonojack)
Connect to the video output jack of the external equipment.

⑰ Camera screws
Loosen these screws to detach the camera from the main unit.

Note

Tighten the camera screws firmly. If the screws are loose, the camera may fall down, and it causes personal injury.

Camera



❶ Lens

❷ POWER lamp (green)
When you set the POWER switch to on, this lamp lights up. This lamp goes off when the system is on standby.

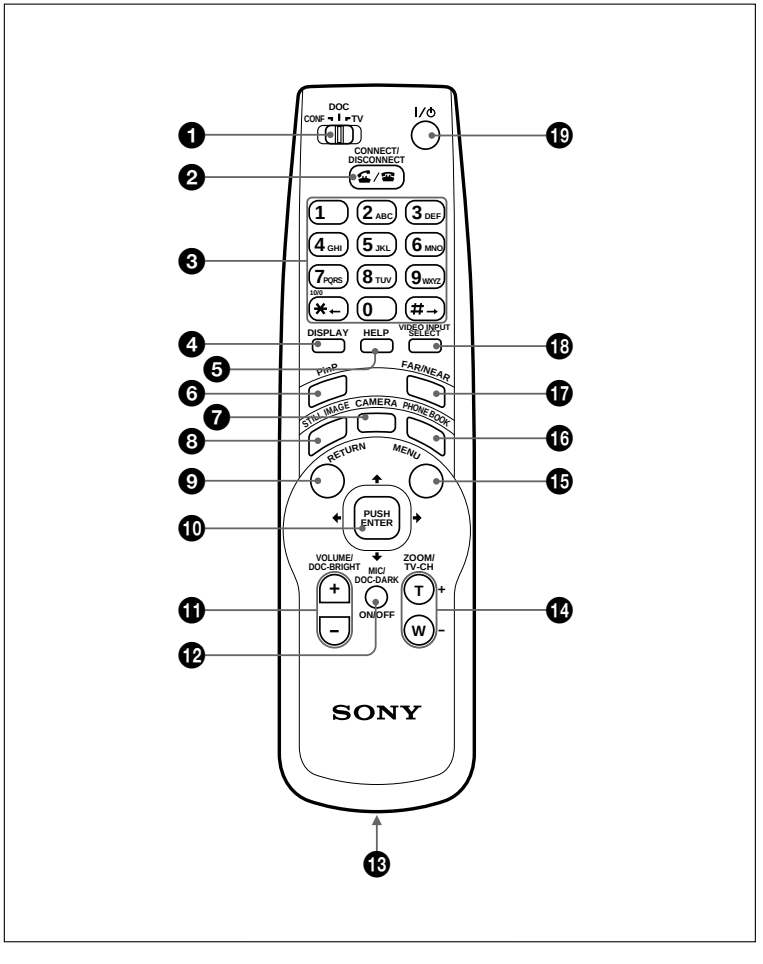
❸ Remote sensor
When operating the Compact Processor, point it toward this sensor. Normally, use this sensor for operation.

❹ PROCESSOR connector
Connect to the main unit.

❺ VISCA OUT connector
This is deactivated in this system.

❻ BACKUP switch
Set it to ON to store the presets.

Remote Commander



When you press the buttons on the Remote Commander, you can hear the beep from the Compact Processor. If you do not need to hear the beep, you can mute the beep in the menu setting.

For details, see "Audio Setup menu" on page 97.

Note

When you operate the Compact Processor, set the CONF/DOC/TV selector to "CONF."

❶ CONF/DOC/TV selector
Selects the equipment to operate.
CONF: Operates the Compact Processor.
DOC: Operates the optional PCS-DS150/DS150P Document Stand.
TV: Operates a Sony TV.

❷ CONNECT/DISCONNECT (☎/⏏) button
Press this button to connect or disconnect a remote party.

❸ Number (0 – 9, #, ∗) buttons
Press these buttons to input characters, such as a telephone number, sub-address, or a name.

❹ DISPLAY button
Press this button to display indicators.

❺ HELP button
Press this button to display an information guide.

❻ PinP (BACK SPACE) button
Press this button to display the inset window. When inputting characters, use this button to delete the last character.

❼ CAMERA (LINE COPY) button
Press this button to display the Camera menu. When inputting characters, use this button to copy the characters to the next box.

❽ STILL IMAGE (CLEAR) button
Press this button to display the Still Image menu. When inputting characters, use this button to delete all the characters in the box.

❾ RETURN button
Press this button to go back to the previous menu.

❿ Joystick
Use the joystick to select the menu or an item, or to control the camera.

⓫ VOLUME/DOC-BRIGHT (+/–) buttons
These buttons adjust the volume.
+: press to increase the volume.
–: press to decrease the volume.

⓬ MIC/DOC-DARK (ON/OFF) button
This button mutes the sounds of the local party. Press again to cancel the muting.

Note

The name of the button has the word DARK, however, this does not function in this system.

⓭ Battery compartment
Insert two size AA (LR6) alkaline batteries.

(Continued)

Location and Function of Parts and Controls

⓮ ZOOM/TV-CH (T+/W–) buttons
These buttons control the zoom of the camera.
T+: press to zoom in the picture.
W–: press to zoom out the picture.

⓯ MENU button
Displays the menu on the monitor screen.

⓰ PHONE BOOK (SYMBOL) button
Press this button to display the Phone Book menu.

⓱ FAR/NEAR (ALPHA/NUM) button
Switches the picture between local and remote.

⓲ VIDEO INPUT SELECT buttons
Selects the input.

⓳ I/⏻ button
Press this button to turn into standby when the system is turned on; to turn on the system when the system is on standby.

To operate a Sony TV monitor

Note

When you operate a Sony TV, set the CONF/DOC/TV selector to "TV."

⓫ VOLUME/DOC-BRIGHT (+/–) buttons
These buttons adjust the volume.
+: press to increase the volume.
–: press to decrease the volume.

⓮ ZOOM/TV-CH (T+/W–) buttons
These buttons select the channel of the TV monitor.
T+: Tunes to the upper channel.
W–: Tunes to the lower channel.

⓲ VIDEO INPUT SELECT button
Selects the input of the TV monitor.

⓳ I/⏻ button
Turns on/off the TV monitor when using an NTSC type TV monitor. Turns off the TV monitor when using a PAL type TV monitor.

On Screen Messages

The following messages appear on the TV monitor when using the Compact Processor and gives instructions on dealing with them.

Message		Remedy
INCORRECT DIALING SETUP		Make sure the selected entry is correctly registered.
CANNOT COMPLETE CONNECTION (The following code and message appear.)		—
0	Unknown network error:	Try again later.
1	Number does not exist:	Check the number and try again.
2,3,6	Network congestion:	Try again later.
16	Normal disconnection:	(The line has been disconnected normally.)
17	Line is busy:	Try again later.
18,19	System not responding:	Check if the remote system is connected.
21	Call rejected:	Check if the remote system is connected.
22	Called party number changed:	Check the number and try again.
26	Connection restoration request:	Try again later.
27	Remote system out of order:	Check if the remote system is operational.
28	Invalid number entered:	Check the number and try again.
31, 34, 41 – 44, 47	Network not available:	Try again later.
50	Not a Subscriber:	Check the remote party's facility contract.
57,58	Bearer capability not authorized:	Check if the line rate is set correctly.
70	Restricted capability:	Set the line rate to 56K and try again.
88	Terminal attribute error:	Check the connection of the remote system.
91, 95 – 102, 111	Protocol error:	Turn off and restart the system and try again.
128	H.221 negotiation timeout:	Turn off and restart the system and try again.
131	Board mismatch:	Check the optional line interface boards.
132	Invalid SPID:	Reregister the SPID.
134	Physical link synchronization error:	Check the connection of the ISDN cable.
144, 145	Bonding negotiation timeout:	Turn off and restart the system and try again.

(Continued)

On Screen Messages

Message	Remedy
177 LAN connection timeout:	Try again later.
178 LAN connection rejected:	Try again later.
179 DNS error:	Please check DNS.
180 Dialing your own number is invalid:	Please check the address and try again.
181 GateKeeper error:	Please check the address and try again.
FAR END INACTIVE	The remote party operates the menu.
CLOSE THIS MENU TO CONNECT LINE	Close the menu.
CANNOT ESTABLISH ALL CONNECTIONS	Check to see if your partner's telephone number is the correct one.
COMMUNICATION ERROR	Wait for a while and then try dialing again.
CONFIGURATION ERROR	Wait for a while and then try dialing again.
Command is rejected by MCU	The function is not supported for MCU if the same operation displays this message again.
CORRUPTIVE DATA STREAM. TERMINATE THE CONNECTION	A signal error occurred. The line connections are compelled to be disconnected.
MEMORY FULL	The memory capacity of the "Memory Stick" is full.
INPUT TITLE	Input an index title.
OPERATION DISABLED	—
WRONG PASSWORD	The password is wrong.
LAN CONFIGURATION ERROR (IP ADDRESS)	The IP address is not proper.
LAN CONFIGURATION ERROR (NETMASK)	The netmask is not proper.
LAN CONFIGURATION ERROR (MAC ADDRESS)	The MAC address is not proper.
LAN CONFIGURATION ERROR (DHCP ERROR)	The IP address and netmask cannot be got.
GATEKEEPER REGISTRATION ERROR	The setting of the Gatekeeper is not proper.
LAN CONFIGURATION ERROR (GATEKEEPER)	The setting of the Gatekeeper is not proper.
LAN CONFIGURATION ERROR (SNMP ERROR)	The setting of the SNMP is not proper.
LAN CONFIGURATION ERROR	The setup in the LAN Setup menu is not proper.
Memory Stick error.	The format of the "Memory Stick" is wrong.

The following messages indicate the state of the system. No action is required.

Message	Meaning
MEETING STARTS!	Connection with the remote party has been completed, the meeting can now begin.
MEETING ENDS	Operations for ending the meeting have been completed.
Charges are ****.	Indicates communication charges.
SITE A (B/C) HAS DISCONNECTED	The remote party A (B/C) has been disconnected.
INSTALLATION COMPLETED	The installation of the Upgrade Kit is complete.
Transmission of the still picture is completed.	Transmission of the still picture is completed.
STILL IMAGE TRANSMISSION CANCELLED	The transmission of the still image was canceled.
STILL IMAGE SAVED	The still picture was saved to the "Memory Stick."
REGISTERED TO X (1–6)	The setting of the zoom and angle was registered to X (1–6).

Troubleshooting

If the Compact Processor does not function or functions incorrectly, check the following.

Symptom	Cause	Solution
The power is not turned on.	The POWER switch is not set to on.	Set the POWER switch to on. See page 21.
	The batteries in the Remote Commander are low or dead.	Replace the batteries with new ones. See page 17.
	The CONF/DOC/TV selector is not set to “CONF.”	Set the CONF/DOC/TV selector to “CONF.”
No sound or the volume is very low.	The volume is too low.	Adjust the sound volume by pressing the VOLUME/DOC-BRIGHT buttons on the Remote Commander. See page 47.
	The remote party has muted their sound.	Wait until the sound transmission from the remote party resumes.
	The Mic Select is not set properly.	Set up Mic Select properly according to the microphone to be used. See page 97.
	Audio input is not selected properly.	Set up Input Select properly. See page 97.
Picture is blurred.	Manual focus is selected but picture remains blurred.	Adjust the focus. See page 51.
	When auto focus is selected, the background is too bright, contrast is too high, or the background or the participants’ clothes contain fine line patterns.	Select manual focus and adjust manually. See page 51.
No picture.	The selected picture source is not tuned on.	Turn on the selected video equipment.
	Video input is not selected properly.	Select the video input with the VIDEO INPUT SELECT button. See page 56.
	The selected picture source is not correctly connected to the system.	Check the connection. See page 112.
	The unit has not been connected properly to a digital line.	If you have installed an optional V.35 Board, make sure the system is connected to an ISDN outlet or a digital line outlet with the terminal adaptor. See pages 16 and 106.
	A voice meeting is held.	This is not a malfunction.
Does not connect with a remote party.	The terminal adaptor is not turned on (if you have installed an optional interface board).	Turn on the terminal adaptor.
	The remote party has not been registered in the system yet.	Register the remote party. See page 71.
Still pictures or the Phone Book cannot be saved to the “Memory Stick.”	The write-protect tab on the “Memory Stick” is set to LOCK.	Set the tab to write.
	The “Memory Stick” has already been recorded to its full capacity.	Use other “Memory Stick.”

Specifications

Compact Processor

This unit is compliant with ITU-T Recommendations H.320 and H.323.

Motion video

Operating bandwidth
- 56 Kbps to 128 Kbps (standard)
- 56 Kbps to 384 Kbps (when installing the PCS-I160)
- 64 Kbps to 1024 Kbps (when upgrading with the PCS-UC161 and connecting on a LAN)

Coding: H.261 (ITU-T Recommendation), H.263 (ITU-T Recommendation)

Picture elements
- CIF: 352 pixels × 288 lines
- QCIF: 176 pixels × 144 lines

Color system
- NTSC (PCS-1600)
- PAL (PCS-1600P)

Still Picture

Pixels: 704 pixels × 480 lines (PCS-1600), 704 pixels × 576 lines (PCS-1600P)

Encoding: H.261 Annex D (4CIF)

Sound

Bandwidth: 7 kHz (G.722, ITU-T Recommendation), 3.4 kHz (G.711/G.723.1/G.728, ITU-T Recommendation)

Transfer rate
- 48 Kbps to 64 Kbps (G.722, ITU-T Recommendation)
- 56 Kbps to 64 Kbps (G.711, ITU-T Recommendation)
- 16 Kbps (G.728, ITU-T Recommendation)
- 6.4 Kbps (G.723.1, ITU-T Recommendation) (when upgrading with the PCS-UC161 and connecting on a LAN)

Network

Multiplexing: Video, audio, data

Frame format: H.221 (ITU-T Recommendation)

Interface: ISDN (BRI) up to 1 line (or up to 3 lines when installing the PCS-I160), V.35 (RS-366) (when installing the PCS-I161): 56 Kbps, 64 Kbps, 56 Kbps to 384 Kbps, LAN (when upgrading with the PCS-UC161 and connecting on a LAN): 64 Kbps to 1024 Kbps

Data transfer rate
- LSD 1.2 Kbps, 4.8 Kbps, 6.4 Kbps
- MLP 6.4 Kbps, 24 Kbps, 32 Kbps
- HMLP 62.4 Kbps, 64 Kbps

Microphone

Bandwidth: 7.0 kHz

Remote control

Far end camera control: H.281 (ITU-T Recommendation)

Data transfer: T.120 (ITU-T Recommendation)

Camera

Video signal
- NTSC color, EIA standards (PCS-1600)
- PAL colour, CCIR standards (PCS-1600P)

Image device
- 1/3-inch CCD (Charge Coupled Device)
- Approx. 410 000 pixels (Effective: approx. 380 000 pixels) (PCS-1600)
- Approx. 470 000 pixels (Effective: approx. 440 000 pixels) (PCS-1600P)

Lens: f = 5.4 to 64.8 mm, F 1.8 to 2.7, Horizontal angle 4.3° to 48.8°

Focal distance: 10 to 800 mm

Minimum illumination: 7 lux at F 1.8/50 IRE

Illumination range: 7 lux to 100 000 lux

Horizontal resolution
- 460 TV lines (PCS-1600)
- 450 TV lines (PCS-1600P)

Pan/tilt action
- Horizontal ±100°
- Vertical ±25°

General

Power consumption: 12V, 2.5 A

Operating temperature: 5°C to 35°C (41°F to 94°F)

Operating humidity: 20% to 80%

Storage temperature: –20°C to +60°C (–4°F to +140°F)

Storage humidity: 20% to 80% (no condensation)

Dimensions: 258 × 134 × 216 mm (w/h/d) (10 1/4 × 5 3/8 × 8 5/8 inches) excluding protruding parts

Mass: Approx. 2.7 kg (5 lb 15 oz)

Supplied accessories
- Remote Commander (1)
- Size AA (LR6) alkaline batteries for Remote Commander (2)
- IR repeater (2)
- MSA-16A “Memory Stick”
- S-video connecting cord (1.3 m, 4.3 ft) (1)
- Audio connecting cable (1 m, 3.3 ft) (1)
- ISDN modular cable (5 m, 16.4 ft) (1)
- AC adaptor (1)
- Power cord (1)
- 21-pin adaptor (1) (PCS-1600P only)
- Velcro (2)
- Operating instructions (1)

Specifications

Remote Commander (PCS-R160)

Signal format
Infrared SIRCS
Control DC 3V using two size AA (LR6) alkaline batteries
Dimensions 50 × 23.4 × 190 mm (w/h/d) (2 × 15/16 × 7 1/2 inches)
Mass Approx. 150 g (5 oz) (including batteries)

AC Adaptor (PCS-AC15)

Power requirements
100 to 240V AC, 50/60 Hz
Power consumption
Approx. 1.0 A to 0.6 A
Operating temperature
5°C to 35°C (41°F to 94°F)
Operating humidity
20% to 80%
Storage temperature
–20°C to +60°C (–4°F to +140°F)
Storage humidity
20% to 80% (no condensation)
Dimensions 93 × 34 × 165 mm (w/h/d) (3 3/4 × 1 3/8 × 6 1/2 inches)
Mass Approx. 470 g (1 lb 1 oz)

Optional microphone PCS-A300

Bandwidth 7.0 kHz
Dimensions 68 × 15 × 90 mm (w/h/d) (2 3/4 × 19/32 × 3 5/8 inches)
Mass Approx. 200 g (7 lb 1 oz)
Power Plug in power

Upgrade Kit PCS-UC160/UC161

Dimensions 50 × 2.8 × 21.5 mm (w/h/d) (2 × 1/8 × 7/8 inches)
Mass Approx. 4 g (0.14 oz)
Supplied accessories
Serial number sticker (1)
Operating instructions (1)

Design and specifications are subject to change without notice.

Pin Assignment

100BASE-TX/10BASE-T jack

Modular jack

Pin	Signal	Description
1	TPOP	Transmit+
2	TPON	Transmit–
3	TPIN	Receive+
4	NC	—
5	NC	—
6	TPIN	Receive–
7	NC	—
8	NC	—

AUX1 IN/MONITOR OUT jacks

Mini-DIN 4-pin jack

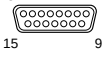
Pin	Signal	Description
1	AGND	Analog Ground
2	AGND	Analog Ground
3	Y	Brightness Signal
4	C	Chrominance Signal

ISDN A jack

Modular jack

Pin	Signal	Description
1	NC	
2	NC	
3	TA	Transmit+
4	RA	Receive+
5	RB	Receive–
6	TB	Transmit–
7	NC	
8	NC	

CAMERA connector (female)



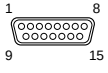
D-sub 15-pin connector

Pin	Signal	Description
1	Y	Brightness signal
2	Y.GND	Brightness signal ground
3	C	Chrominance signal
4	C.GND	Chrominance signal ground
5	GND	Ground
6	GND	Ground
7	TxD	Transmit data
8	RxD	Receive data
9	12V	12V
10	12V	12V
11	GND	Ground

(Continued)

12	SIRCS	Remote control data
13	DTR	Data terminal ready
14	Lock	Lock
15	GND	Ground

PROCESSOR connector (male)



D-sub 15-pin connector

Pin	Signal	Description
1	Y	Brightness signal
2	Y.GND	Brightness signal ground
3	C	Chrominance signal
4	C.GND	Chrominance signal ground
5	GND	Ground
6	GND	Ground
7	RxD	Receive data
8	TxD	Transmit data
9	12V	12V
10	12V	12V
11	GND	Ground
12	SIRCS	Remote control data
13	DTR	Data terminal ready
14	GND	Ground
15	GND	Ground

AUX CONTROL connector (male)

D-sub 9-pin connector

Pin	Signal	Description
1	DCD	Carrier detect
2	RXD	Receive Data
3	TXD	Transmit Data
4	DTR	Data Terminal Ready
5	GND	Ground
6	DSR	Data Set Ready
7	RTS	Request to Send
8	CTS	Send Ready
9	RI	Call

Pin Assignment on Optional Board Connectors

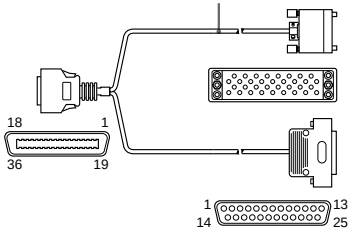
ISDN B/C jacks (PCS-I160)

Modular jack

Pin	Signal	Description
1	NC	
2	NC	
3	TA	Transmit+
4	RA	Receive+
5	RB	Receive–
6	TB	Transmit–
7	NC	
8	NC	

V.35 connector (female) (PCS-I161)

PCS-K32 V.35 adapter connector cable



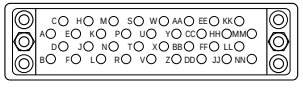
Half-pitch 36-pin connector

Pin	Signal	Description
1	SGND	Signal ground
2	SGND	Signal ground
3	CABLE1	Cable1
4	V35SD+	Send data+
5	V35SD–	Send data–
6	V35RD+	Receive data+
7	V35RD–	Receive data–
8	V35ER	Data terminal ready
9	V35RS	Request to send
10	V35ST+	Transmit Timing+
11	V35ST–	Transmit Timing–
12	V35RT+	Receive Timing+
13	V35RT–	Receive Timing–
14	V35TT+	Send Timing+
15	V35TT–	Send Timing–
16	SGND	Signal ground
17	SGND	Signal ground
18	SGND	Signal ground
19	SGND	Signal ground
20	SGND	Signal ground
21	CABLE2	Cable2
22	V35RI	Call Indication
23	V35DR	Data set ready
24	366DLO	Data line occupied
25	V35CS	Ready to send
26	366ACR	Abandon call
27	366DPR	Number display
28	366CRQ	Call request
29	366PND	Next no. request
30	366NB1	Numerical signal #1 bit
31	366NB2	Numerical signal #2 bit
32	366NB4	Numerical signal #4 bit
33	366NB8	Numerical signal #8 bit
34	SGND	Signal ground
35	SGND	Signal ground
36	SGND	Signal ground

(Continued)

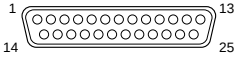
Specifications

CCITT V.35 connector (cable side)



Pin	Signal	Description
A	CGND	Chassis ground
B	SGND	Signal ground
C	V35RS	Request to send
D	V35CS	Clear to send
E	V35DR	Data ready
H	V35ER	Data terminal ready
J	V35RI	Call display
P	V35SD+	Send data+
R	V35RD+	Receive data+
S	V35SD–	Send data–
T	V35RD–	Receive data–
U	V35TT+	Transmit timing+
V	V35RT+	Receive timing+
W	V35TT–	Transmit timing–
X	V35RT–	Receive timing–
Y	V35ST+	Send timing+
AA	V35ST–	Send timing–

D-sub 25-pin connector (cable side)



Pin	Signal	Description
1	SGND	Signal ground
2	366DPR	Number display
3	366ACR	Abandon call
4	366CRQ	Call request
5	366PND	Present next digit
7	SGND	Signal ground
14	366NB1	Numerical signal 0 bit
15	366NB2	Numerical signal 1 bit
16	366NB4	Numerical signal 2 bit
17	366NB8	Numerical signal 3 bit
18	366RC	Receive common
19	SGND	Signal ground
22	366DLO	Data line occupied

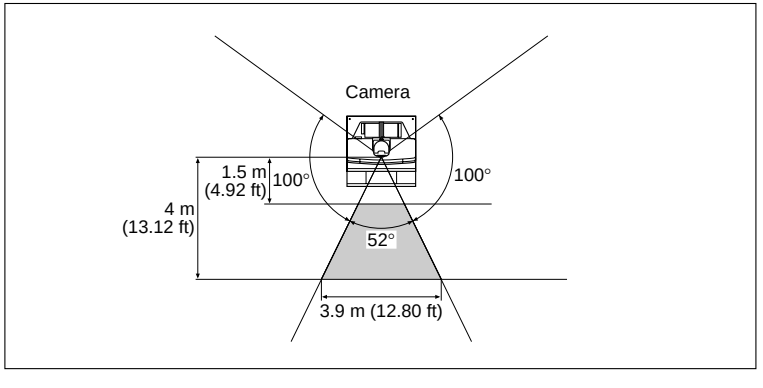
Videomeeting Room Layout

Be sure to position camera and microphone appropriately in your videomeeting room.

Camera Range

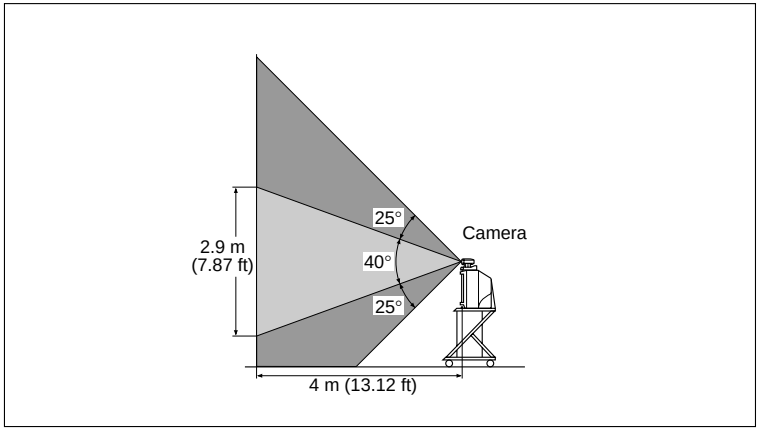
▭ represents the scope of the camera when the zoom has been extended fully. ▬ indicates the scope of the camera when the left/right angling function is fully utilized. Use the measurements below as a guide for the layout of your videomeeting room.

Top view (horizontal range at maximum zoom-out)



Videomeeting Room Layout

Side view (vertical range at maximum zoom-out)

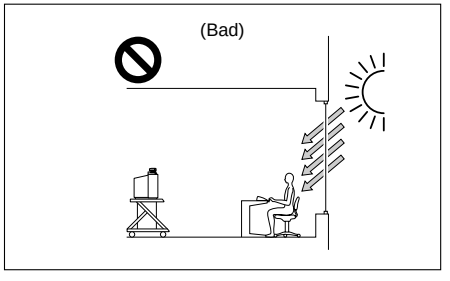


Layout Considerations

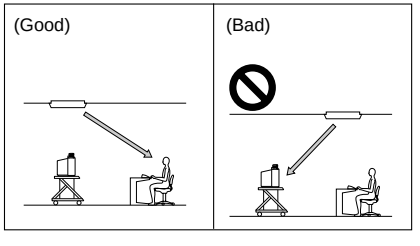
- Avoid allowing large, moving objects, especially people behind the participants; the quality of the local transmission will deteriorate.
- Do not seat participants with fine line patterns in front of a wall.
- Choose a place which is echo-free.
- Do not install the system near noise sources such as air conditioners or copy machines.
- Avoid placing the system in a room where there are speakers used for an in-house broadcasting system.

Lighting Considerations

Do not point the camera towards a window as back lighting may wash out the contrast. Cover any windows with a thick curtain.



Adjust room lighting so that it falls on the participants. Avoid direct light on the TV monitor. Light intensity on faces should be about 300 lux or more.



If an inverter type or brightness-adjustable type of fluorescent lamp is used, the sensitivity of the Remote Commander may deteriorate.

http://getMANUAL.com

Glossary

Bonding
An abbreviation for Bandwidth on Demand Interoperability.

BRI
An abbreviation for Basic Rate Interface. Single ISDN has two B-channels and one D-channel.

CIF
An abbreviation for Common Intermediate Format. This format allows to communicate with between different color systems (NTSC or PAL).
352 pixels × 288 lines

Codec
An abbreviation for Coder-Decoder. An electronic device that converts an analog signal (such as voice or video) to a digital data stream, compresses it, and sends it over a digital communications line. Another codec reverses the process at the receiving end.

DHCP
An abbreviation for Dynamic Host Configuration Protocol. Manages IP addresses in the network.

DNS
An abbreviation for Domain Name System.

Echo
Reflection of sound from walls and other surrounding objects.

Frame rate
The number of frames which can be encoded/decoded in one second.

G.711
Pulse code modulation (PCM) of voice frequencies.

G.722
7 kHz audio-coding within 64 Kbps.

G.723.1
5.3 or 6.3 kHz audio-coding within 32 Kbps.

G.728
Coding of speech at 16 Kbps using low-delay code excited linear prediction.

Gatekeeper
Controls the access of H.323 videoconference devices on a network. Administers the zone, access limitation, audio/video bandwidth, and alias etc.

H.221
Frame structure for a 64 to 1920 Kbps channel in audiovisual teleservices.

H.261
Video codec for audiovisual services as p × 64 Kbps.

H.263
This is basically based on H.261, however, this enables communication using via a lower bit rate.

H.320
Narrow-band visual telephone systems and terminal equipment.

H.323
This enables communications with the H.320 terminal on the non-QOS (Quality of Service) LAN.

Interface
A device that goes between two different devices so that they can communicate with each other.

I-MUX
An abbreviation for Inverse Multiplexer. This protocol allows you to transmit the data at 384 Kbps via 6B-channel.

ISDN
An acronym for Integrated Services Digital Network. This is a communications protocol by CCITT on transmission of integrated voice, video, and data. Bandwidths include basic (64 Kbps) and primary rate (1.544 and 2.048 Mbps).

ITU-T
An abbreviation for International Telecommunication Union, Telecommunications.

Lip synchronization
A function that synchronizes sound with motion. Sound processing is much faster than motion processing, thus sound and motion sometimes get out of step with each other.

MCU
An abbreviation for Multipoint Control Unit. When connecting a MCU, a multipoints meeting can be held.

PBX
An abbreviation for Private Branch eXchange.

P in P
An abbreviation for “Picture in Picture.” This is a function which allows the user, to monitor their own party on a small window on the TV monitor.

QCIF
An abbreviation for Quater CIF. The number of pixels is a quarter than one of CIF format.
176 pixels × 144 lines

SNMP
An abbreviation for Simple Network Management Protocol. This protocol is for management information between the management station and the managed terminals.

SPID
An abbreviation for Service Profile ID.

Still picture
Still, unmoving pictures, as in a photograph.

Sub-address
An identification number given to devices sharing a common ISDN line .

Terminal adaptor
A device used to connect various equipment to a digital line. The device sits between the equipment and the digital line and checks that signals are correctly sent or received.

V.35
This interface is frequently used for data communication since this transmits data at high speed.

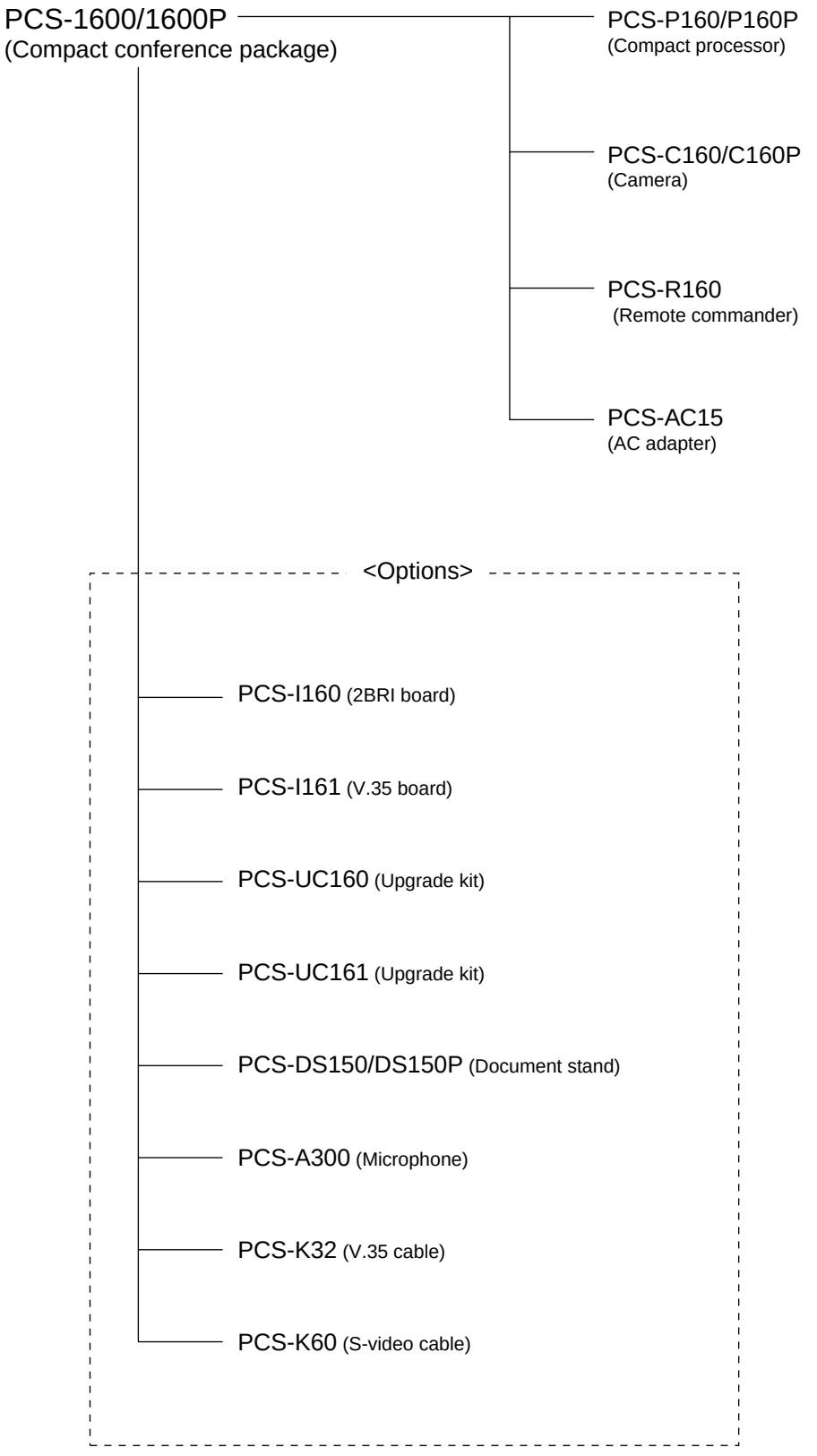
Sony Corporation Printed in Japan

Sony online http://www.world.sony.com/

Printed on recycled paper

Section 2
Service Overview

2-1. System Configuration

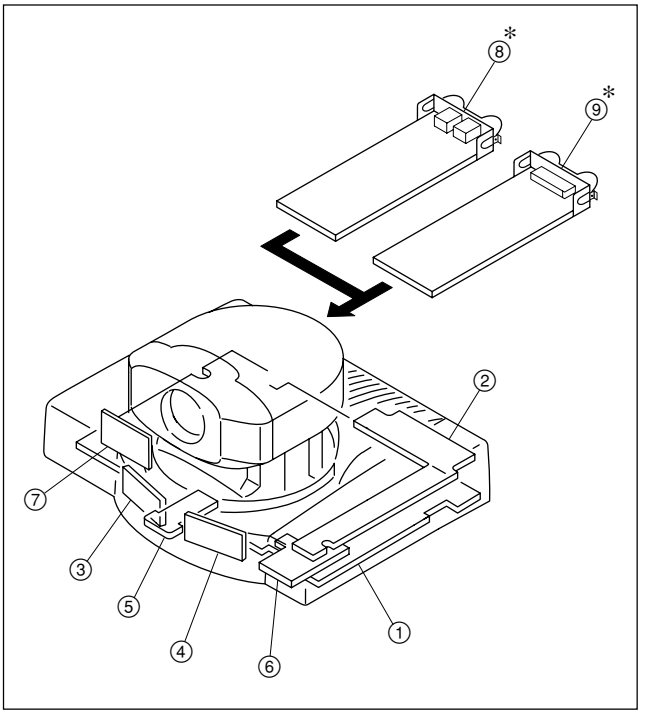


2-2. List of Required Measuring Equipment and Tools

Measuring equipment and tools	Type
Composite video signal generator with S-output	Sony Tektronix TSG-130 or equivalent
Oscilloscope	Sony Tektronix 2465B or equivalent
Video monitor	Sony Tektronix BVM-1410 or equivalent
Composite waveform monitor/vector scope	Sony Tektronix 1750 or equivalent
IBM* personal computer	
Handycam supporting the laser AV link	DCR-TRV900/TRV10/TRV9/TRV310K/TRV110K/TRV66K, HSA-IF1
16MB memory stick	
S-BNC video cable	Part No. J-6381-380-A
RS-232C cross cable	_
ISDN cable	_
V.35 cable	PCS-K32

* : IBM is a trademark of IBM Corporation.

2-3. Board Layout Diagram



Board Configuration

	Board Name	Main function
①	MA-107/107P board	MAIN board
②	DE-55 board	Demodulator board
③	IPM-92A board	IR receiver board
④	IPM-93A board	IR receiver board
⑤	RX-47A board	Remote receiver board
⑥	CN-2143 board	Connecter board
⑦	EX-816 board	Extention board
⑧	*IF-823 board (2BRI board)	Interface board
⑨	*IF-824 board (V.35 board)	Interface board

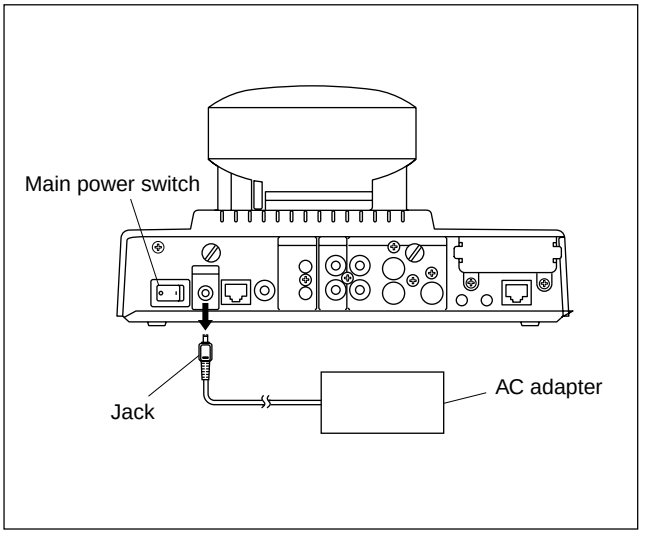
* : Optional board

2-4. Removing the Cabinets

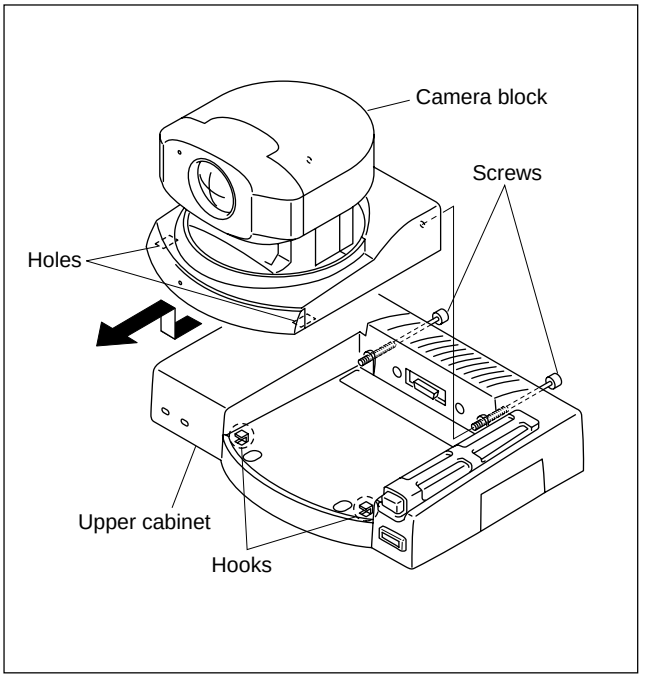
2-4-1. Upper Cabinet

Note

To protect the inside of the unit from damage, be sure to turn off the main power, remove the AC adapter jack, and perform the following procedure.



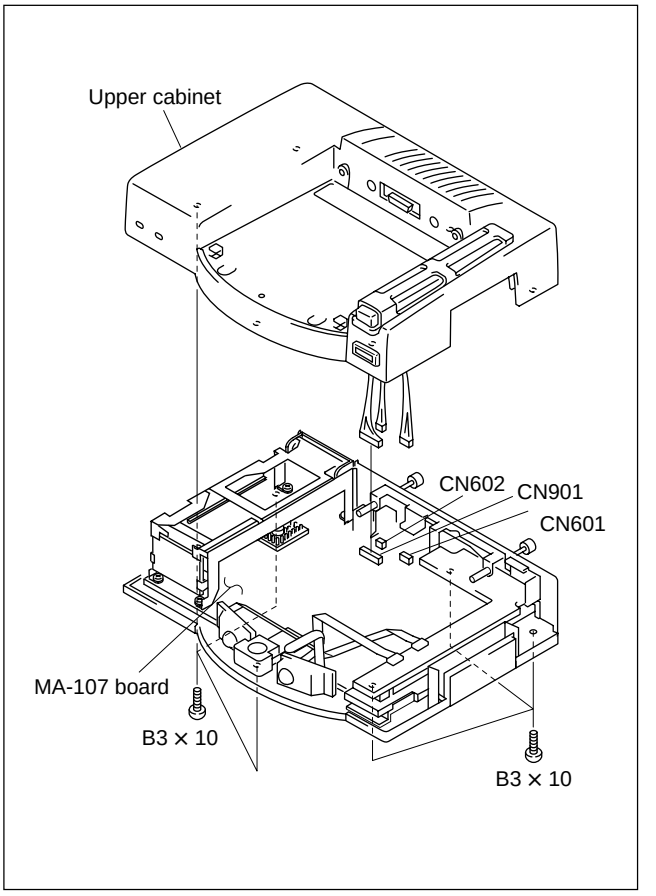
1. When the optional board is installed to the unit, remove it. (Refer to " Sec.2-5-3. Optional board".)
2. Loosen the two camera retaining screws of the upper cabinet. Slide the camera block in the direction of the arrow while raising up it and remove it from the hook of the upper cabinet.



3. Remove the six screws (B3 × 10) and remove the upper cabinet.
4. Remove the three connectors (CN601, CN602, CN901) from the MA-107/107P board.

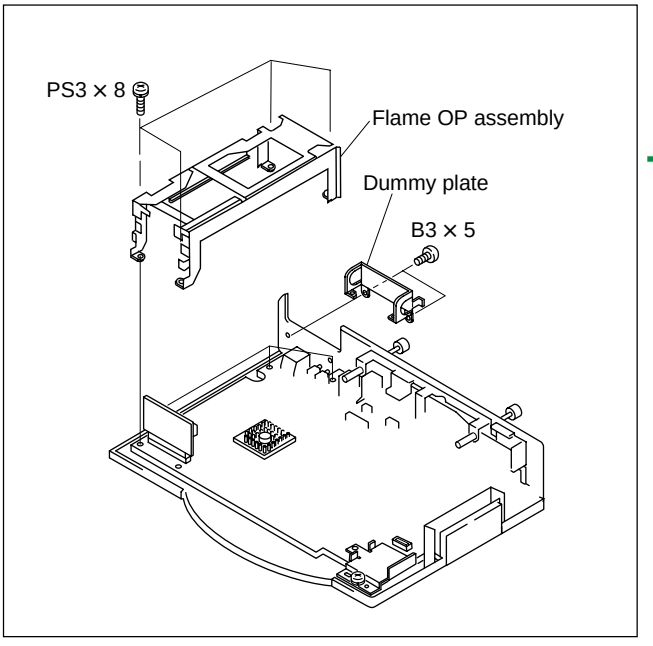
Note

Standard tightening torque : 60×10^{-2} N•m {6 kgf•cm}

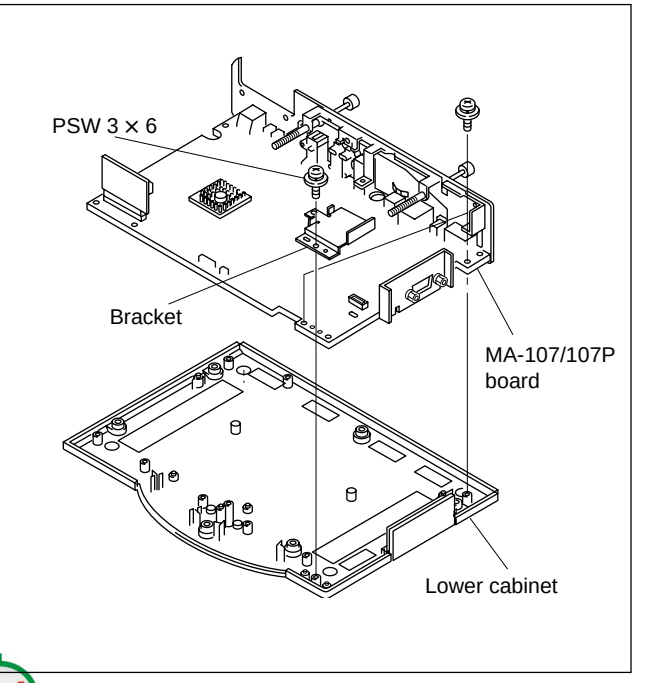


2-4-2. Lower Cabinet

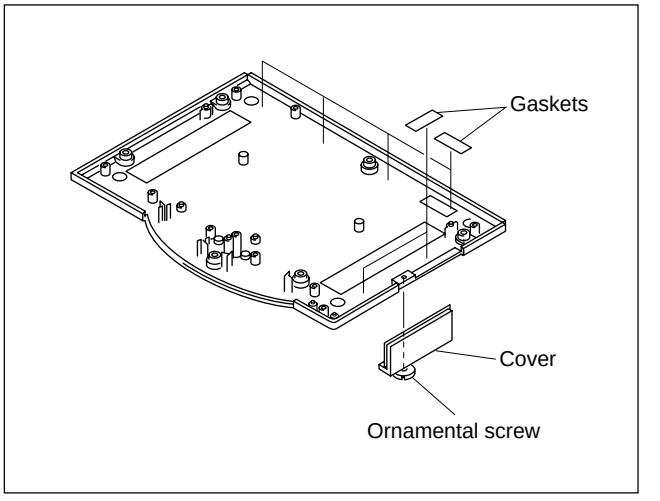
1. Remove the upper cabinet.
   (Refer to Section “2-4-1. Removing the Upper cabinet”.)
2. Remove the RX-47A board.
   (Refer to Section “2-5-4. RX-47A board”.)
3. Remove the IPM-92A board.
   (Refer to Section “2-5-5. IPM-92A board”.)
4. Remove the IPM-93A board.
   (Refer to Section “2-5-6. IPM93A board”.)
5. Remove the DE-55 board.
   (Refer to Section “2-5-7. DE-55 board”.)
6. Remove the CN-2143 board.
   (Refer to Section “2-5-8. CN-2143 board”.)
7. Remove the two screws (B3 × 5) and remove the dummy plate.
8. Remove the four screws (PS3 × 8) and remove the frame OP assembly.



9. Remove the one screw (PSW3 × 6) and remove the bracket.
10. Remove the two screws (PSW3 × 6) and remove the MA-107/107P board.



11. Remove the ornamental screw (with stopper ring) and remove the cover.



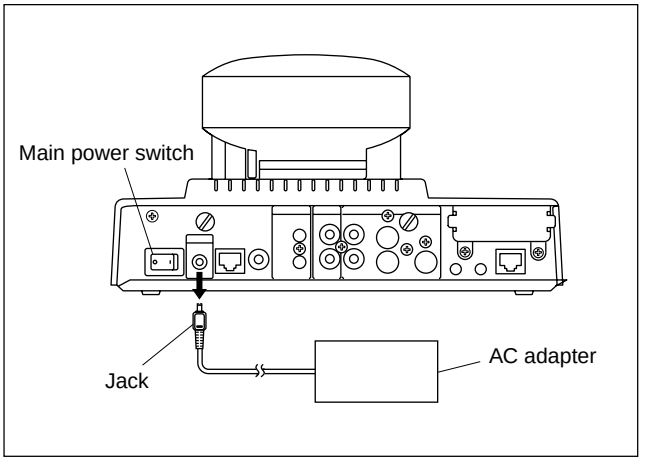
Note

When replacing the bottom cabinet, make sure obtains the two gaskets with the bottom cabinet at the same time, then replace them.

2-5. Replacing the Main Parts

Note

To protect the inside of the unit from damage, be sure to turn off the main power, remove the AC adapter jack, and perform the following procedure.



2-5-1. Speaker

Replacement Part

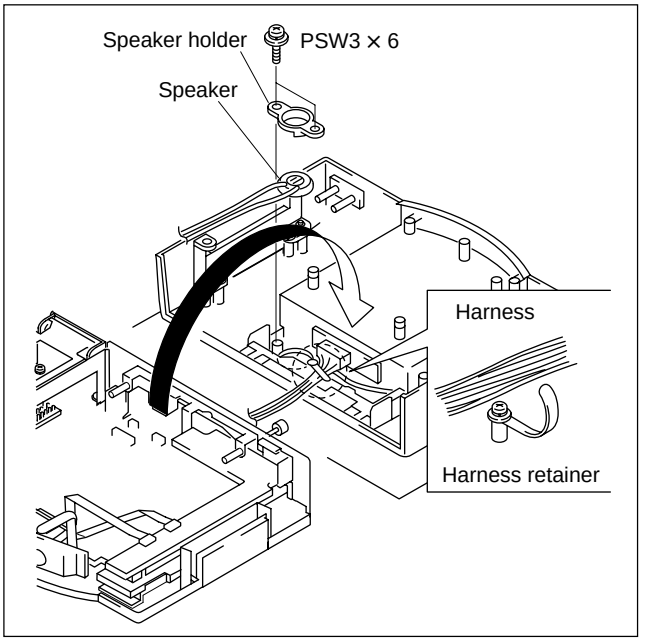
Part name : speaker
Part number : 1-505-156-11

Replacement Procedure

1. Remove the upper cabinet. (Refer to Section “2-4-1. Removing the Upper cabinet”.)
2. Open the upper cabinet in the direction of the arrow and remove the harness from the harness retainer.
   Note
   Place a sheet under the cabinet to protect it.
3. Remove the two screws (PSW3 × 6), and remove the speaker holder and the speaker.
4. Attach the new speaker by reversing the disassembling procedure of steps 1 to 3.

Note

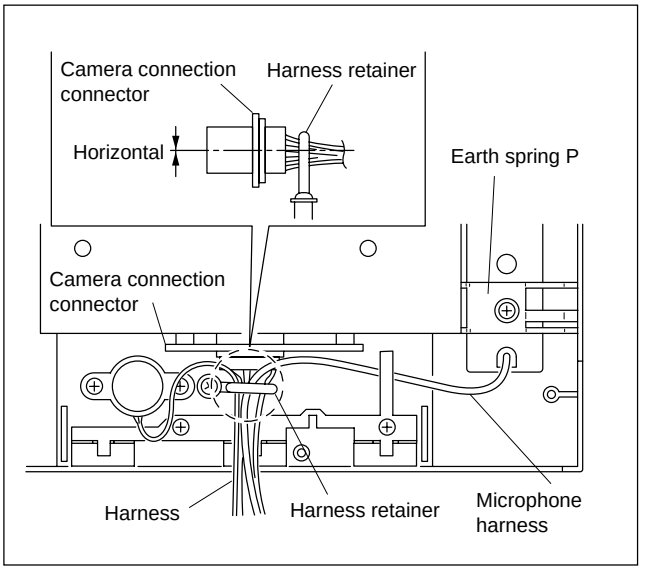
Standard tightening torque : 60×10^{-2} N•m {6 kgf•cm}



Precaution for installation of the speaker

Be careful of the followings when fixing the harness using the harness retainer as shown.

1. Be cause the built-in microphone is a high sensitivity microphone, the microphone can pick up vibrations of the PCS-1600/1600P via microphone harness.
   Be sure to give a small amount of play to the microphone harness when fixing the harness with the harness retainer.
2. The camera connection connector as shown is fixed with some play in order that the connector can be easily connected to the camera block.
   Adjust the harness retainer after the harness is fixed with the harness retainer, so that the camera connecting connector becomes level.



2-5-2. Microphone

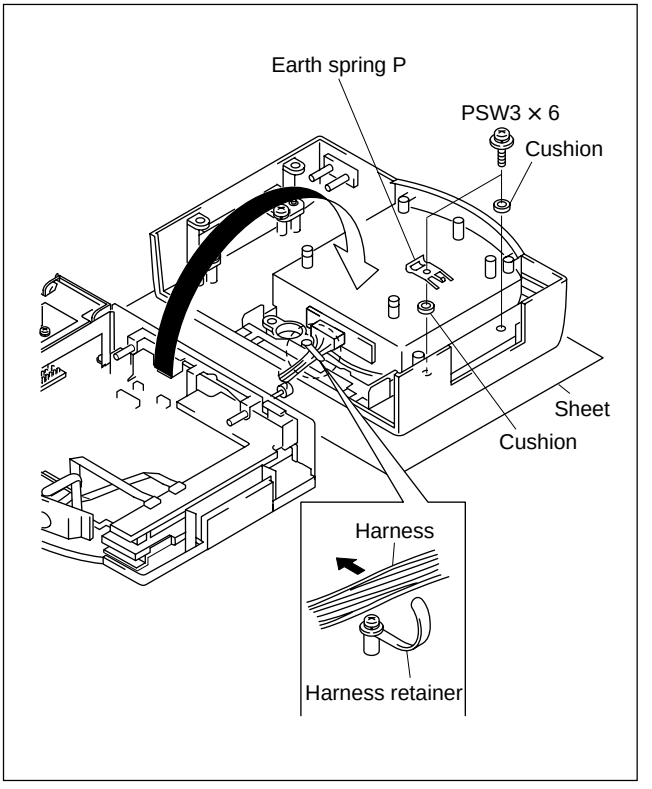
Replacement Part

Part name : microphone
Part number : 1-542-401-12

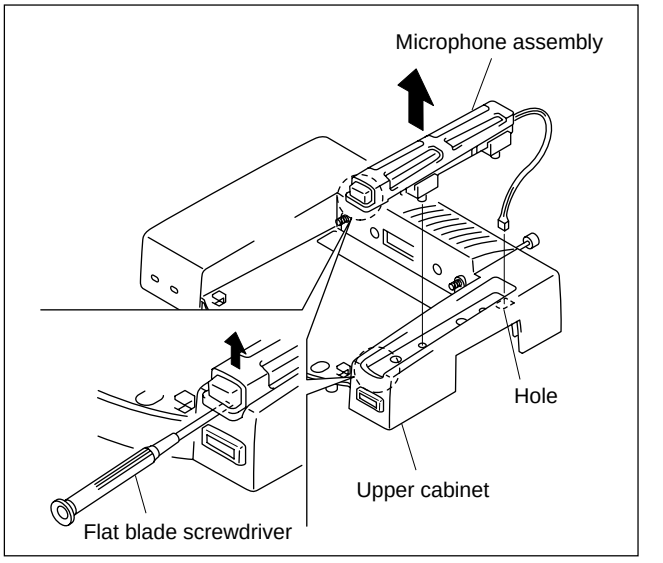
Replacement Procedure

1. Remove the upper cabinet. (Refer to Section "2-4-1. Removing the Upper cabinet".)
2. Turn over the upper cabinet and remove the harness from the harness retainer.
   Note
   Place a sheet under the cabinet to protect it.

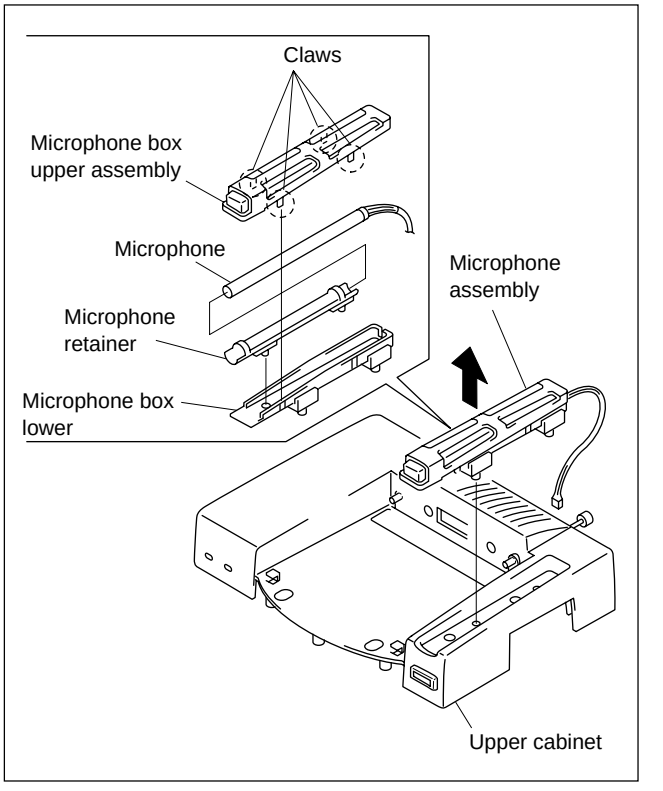
3. Remove the two screws (PSW3 × 6) and earth spring P, and remove the cushion.



4. Turn the upper cabinet so that it faces upwards. Remove the microphone assembly and remove the harness from the hole.
   Note
   If the microphone assembly cannot be removed easily, push up it with a flat blade screwdriver.



5. Unlock the four claws of the microphone box upper assembly from the bottom of the microphone box.
6. Remove the microphone from the bottom of the microphone box.
7. Remove the microphone from the microphone retainer.



8. Attach the new microphone by reversing the disassembling procedure of steps 1 to 7.

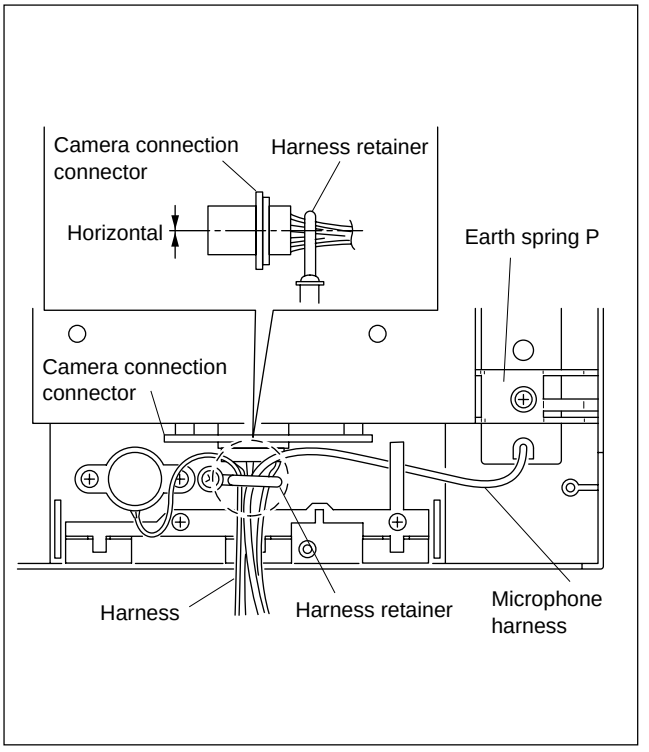
Note

Standard tightening torque : 60×10^{-2} N•m {6 kgf•cm}

Precaution for installation of the microphone

Be careful of the followings when fixing the harness using the harness retainer as shown.

1. Be cause the built-in microphone is a high sensitivity microphone, the microphone can pick up vibrations of the PCS-1600/1600P via microphone harness.
   Be sure to give a small amount of play to the microphone harness when fixing the harness with the harness retainer.
2. The camera connection connector as shown is fixed with some play in order that the connector can be easily connected to the camera block.
   Adjust the harness retainer after the harness is fixed with the harness retainer, so that the camera connecting connector becomes level.



2-5-3. Optional Boards

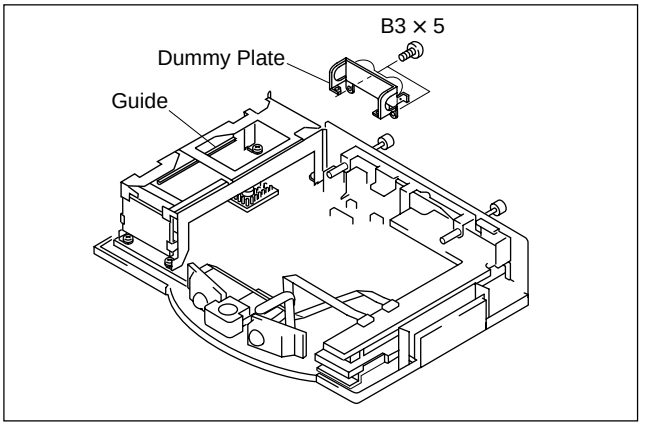
Please place an order for the following optional boards in case the optional board needs to be replaced.

Ordering Parts

IF-823 board : PCS-I160 (2BRI board)
IF-824 board : PCS-I161 (V.35 board)

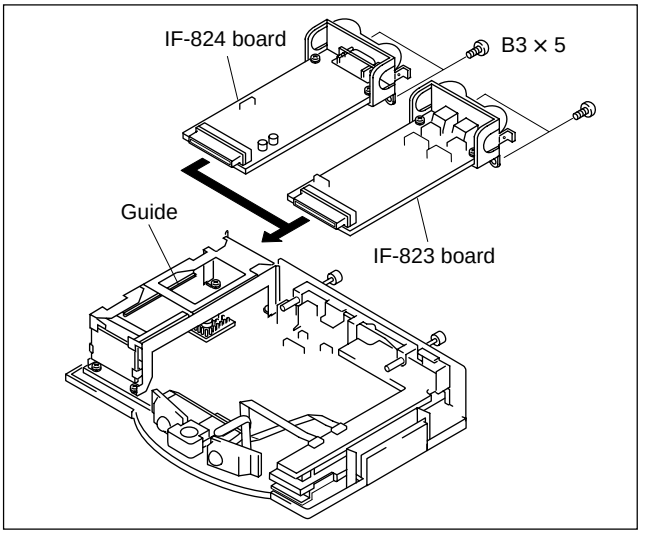
Replacement Procedure

1. Remove the two screws (B3 × 5) and remove the dummy plate.
2. Insert the optional board into the unit along with the guide.
3. After fully inserting the optional board until it goes to inner part, fix this board to the unit using the two screws (B3 × 5) that removed in Step 1 or attached to the PCS-I16X.



Note

- For the purpose of explaining, upper cabinet is removed on the illustration. But, it need not be removed actuality.
- Attach the IF-823 board and the IF-824 board in the same way.



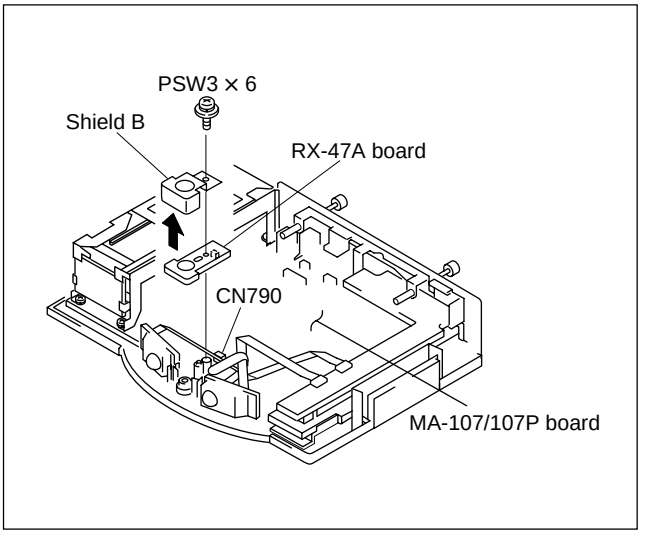
2-5-4. RX-47A Board

Replacement Part

Part name : RX-47A board
Part number : A-8327-106-A

Replacement Procedure

1. Remove the upper cabinet. (Refer to Section “2-4-1. Removing the Upper cabinet”.)
2. Remove the screws fixing the RX-47A board that is connected to the MA-107/107P board.
3. Remove the shield B.
4. Remove the RX-47A board that is connected to the CN790 on the MA-107/107P board.



5. Attach the new RX-47A board by reversing the disassembling procedure of steps 1 to 3.

Note

Standard tightening torque : 60×10^{-2} N•m {6 kgf•cm}

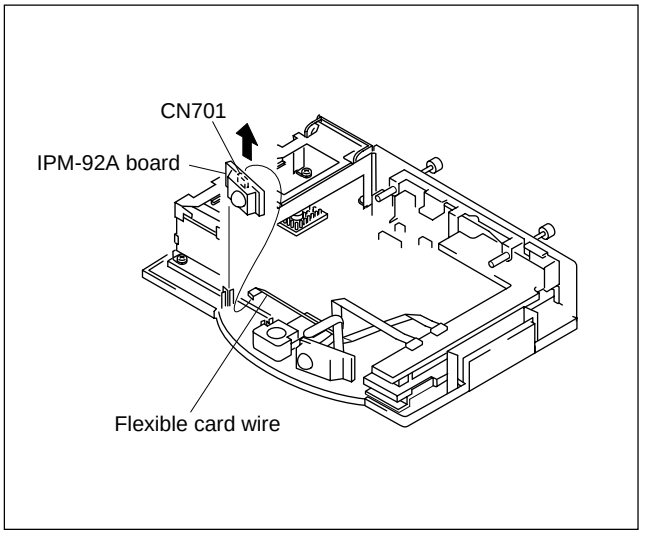
2-5-5. IPM-92A Board

Replacement Part

Part name : IPM-92A board
Part number : A-8327-096-A

Replacement Procedure

1. Remove the upper cabinet. (Refer to Section “2-4-1. Removing the Upper cabinet”.)
2. Remove the flexible card wire from the connector CN701 on the IPM-92A board, and remove the IPM-92A board.



3. Attach the new IPM-92A board by reversing the disassembling procedure of steps 1 and 2.

http://getMANUAL.com

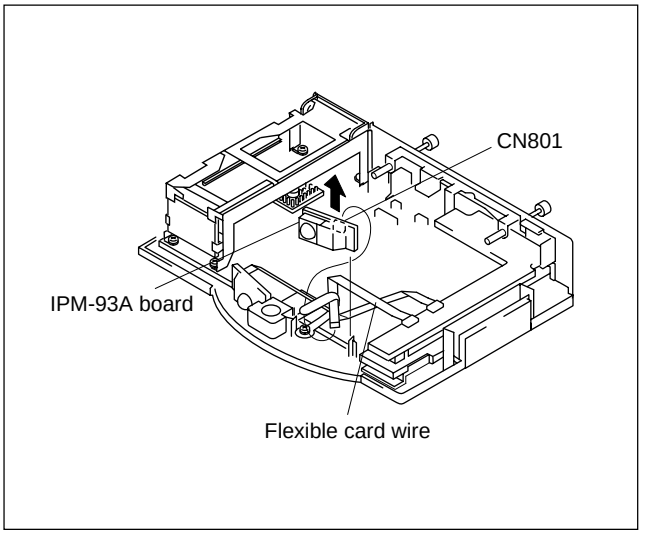
2-5-6. IPM-93A Board

Replacement Part

Part name : IPM-93A board
Part number : A-8327-097-A

Replacement Procedure

1. Remove the upper cabinet. (Refer to Section “2-4-1. Removing the Upper cabinet”.)
2. Remove the flexible card wire from the connector CN801 on the IPM-93A board, and remove the IPM-93A board.



3. Attach the new IPM-93A board by reversing the disassembling procedure of steps 1 and 2.

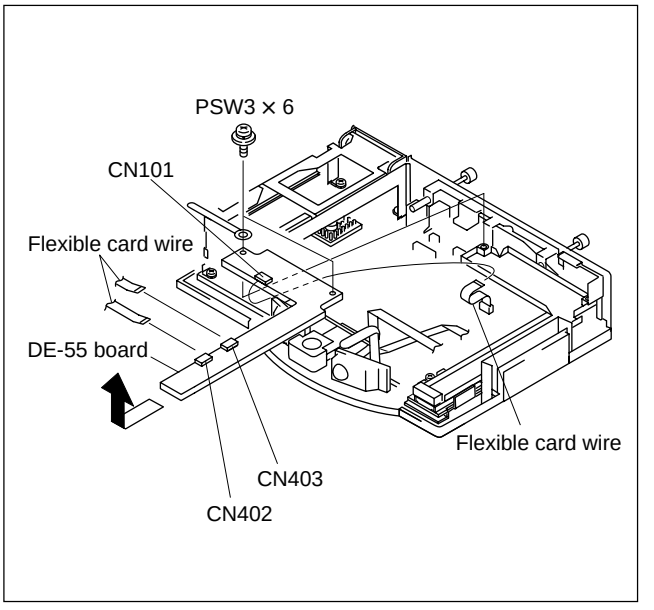
2-5-7. DE-55 Board

Replacement Part

Part name : DE-55 board
Part number : A-8327-095-A

Replacement Procedure

1. Remove the upper cabinet. (Refer to Section “2-4-1. Removing the Upper cabinet”.)
2. Remove the flexible card wire from the three connectors (CN101, CN402, CN403) on the DE-55 board.
3. Remove the two screws (PSW3 × 6) and remove the DE-55 board in the direction of the arrow.



4. Attach the new DE-55 board by reversing the disassembling procedure of steps 1 to 3.

Note

Standard tightening torque : 60×10^{-2} N•m {6 kgf•cm}

Note

When the board is removed, be careful not to damage the chassis or other parts.

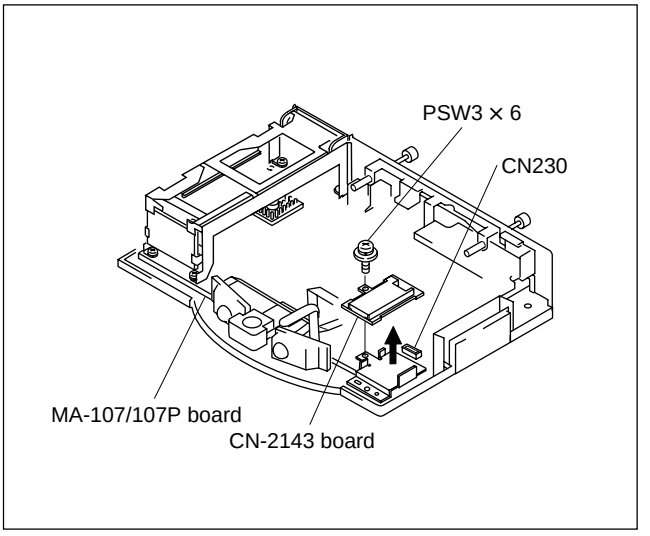
2-5-8. CN-2143 Board

Replacement Part

Part name : CN-2143 board
Part number : A-8327-102-A

Replacement Procedure

1. Remove the upper cabinet. (Refer to Section “2-4-1. Removing the Upper cabinet”.)
2. Remove the DE-55 board. (Refer to Section “2-5-7. DE-55 board”.)
3. Remove the one screw (PSW3 × 6) and remove the CN-2143 board from CN230 on the MA-107/107P board.



4. Replace the new CN-2143 board in the reverse order of steps 1 to 3.

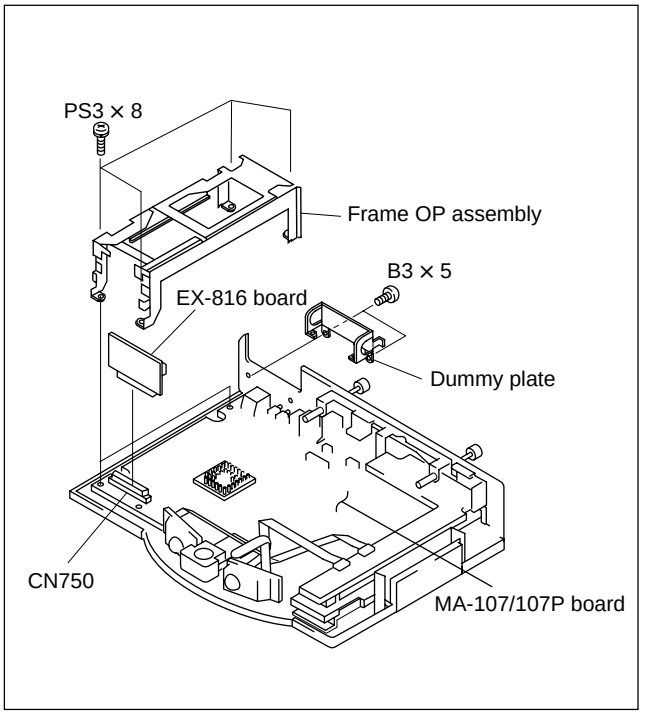
2-5-9. EX-816 Board

Replacement Part

Part name : EX-816 board
Part number : A-8327-101-A

Replacement Procedure

1. Remove the upper cabinet. (Refer to Section “2-4-1. Removing the Upper cabinet”.)
2. Remove the two screws (B3 × 5) and remove the dummy plate.
3. Remove the four screws (PS3 × 8) and remove the frame OP assembly.
4. Remove the EX-816 board from CN750 on the MA-107/107P board.



5. Replace the new EX-816 board in the reverse order of steps 1 to 4.

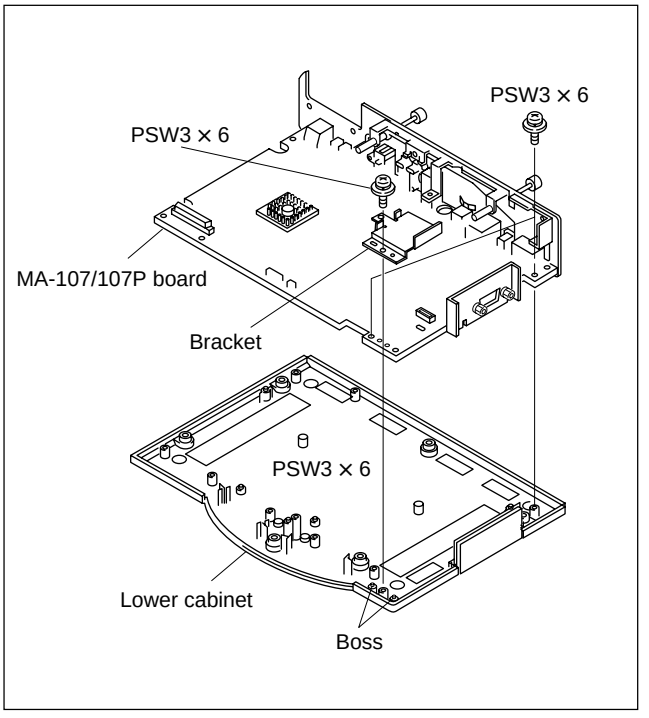
2-5-10. MA-107/107P Board

Replacement Part

Part name : MA-107 board (For NTSC)
MA-107P board (For PAL)
Part number : A-8327-091-A (For NTSC)
A-8327-092-A (For PAL)

Replacement Procedure

1. Remove the upper cabinet.
(Refer to Section “2-4-1. Removing the Upper cabinet”.)
2. Remove the RX-47A board.
(Refer to Section “2-5-4. RX-47A Board”.)
3. Remove the IPM-92A board.
(Refer to Section “2-5-5. IPM-92A Board”.)
4. Remove the IPM-93A board.
(Refer to Section “2-5-6. IPM-93A Board”.)
5. Remove the DE-55 board.
(Refer to Section “2-5-7. DE-55 Board”.)
6. Remove the CN-2143 board. (Refer to Section “2-5-8. CN-2143 board”.)
7. Remove the EX-816 board. (Refer to Section “2-5-9. EX-816 board”.)
8. Remove the one screw (PSW3 × 6) and remove the bracket.
9. Remove the two screws (PSW3 × 6) and remove the MA-107/107P board.
10. Remove the camera retaining screw and two screws (PSW3 × 8), remove the screw supporting bracket toward in arrow direction on the figure.
11. Remove the four tapping screws (BTP3 × 8) and remove the connector panel.
12. Remove the two hexagon screws and two screws (PSW3 × 6), remove the connector side panel.
13. Replace the new MA-107/170P board in the reverse order of steps 1 to 12.

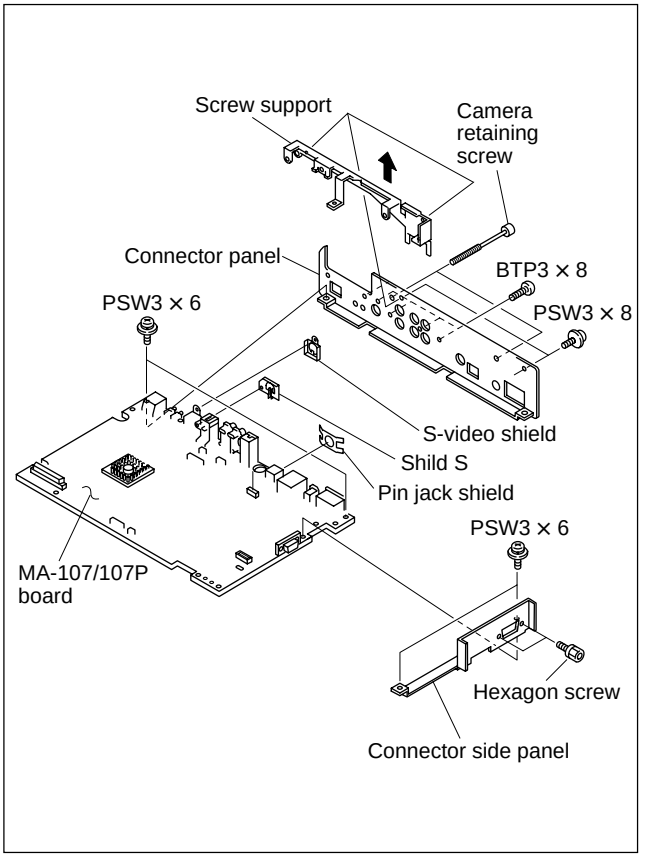


Note

The shield S is attached to the connector CN400 and S-video shield is attached to the CN402 and Pin jack shield is attached to the connector CN603 on the MA-107/107P board. Be careful not to lose them because they are the small parts. When attach the bracket, two setting holes of bracket to the bosses of lower cabinet first and tighten the screw shown in the figure.

Note

PSW3 × 6, 8 : Standard tightening torque :
60×10^{-2} N•m {6 kgf•cm}
BTP3 × 8 : Standard tightening torque:
80×10^{-2} N•m {8 kgf•cm}
Hexagon screw : Standard tightening torque :
60×10^{-2} N•m {6 kgf•cm}



2-5-11. Flexible Card Wire

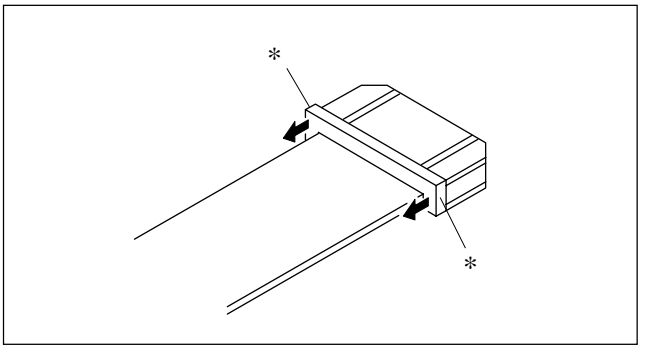
Replacement Procedure of Horizontal Type Connector

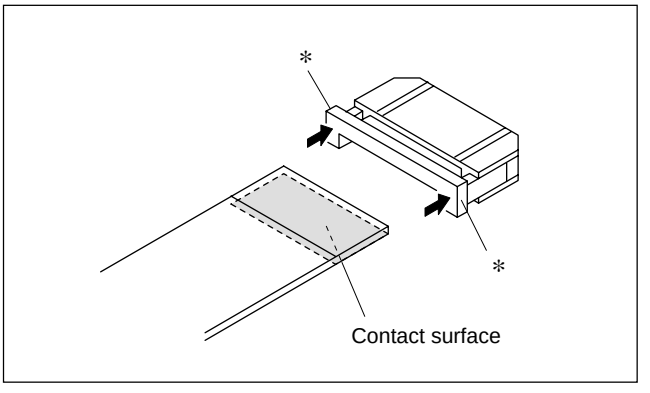
1. Slide the portion marked ∗ in the direction of the arrow, release the lock, and remove the flexible card wire.
   Note
   Be careful not to bend the flexible card wire.

2. Insert the flexible card wire into the connector while being careful about the direction of the contact surface.

3. After inserting it completely, push the portion marked ∗ in the direction of the arrow to fix the flexible card wire.

Note
Be sure to hold both sides of the portion marked ∗.





2-6. Notes on Repair Parts

2-6-1. Notes on Repair Parts

Safety Related Components Warning

WARNING

Components marked ⚠ are critical to safe operation. Therefore, specified parts should be used in the case of replacement.

Section 3
Operating Descriptions

3-1. Overall Function

• Overall Function of Compact Processor (PCS-P160/P160P)

3-1-1. Interface between Devices

The Compact Conference Package PCS-1600/1600P consists of the compact processor (PCS-P160/P160P), camera (PCS-C160/C160P), external microphone (PCS-A300/option) and remote commander (PCS-R160). This section describes the interface between these devices.

1. Interface between compact processor (PCS-P160/P160P) and camera (PCS-C160/C160P): D-sub 15-pin

Power :

The +12 V DC power that is supplied to the compact processor (PCS-P160/P160P) from the AC adapter, is at the same time sent to the camera (PCS-C160/C160P) through a switch and fuse.

Video signal :

The video signal that is created by the camera (PCS-C160/C160P) is input to the compact processor (PCS-P160/P160P) in the form of a YC video signal.

VISCA signal :

The setup and operation of the camera (PCS-C160/C160P) are controlled from the compact processor (PCS-P160/P160P) using the serial VISCA signal. The camera (PCS-C160/C160P) status is also read using the VISCA signal by the compact processor (PCS-P160/P160P).

Note

The Automatic Target Tracking Function is contained by the camera (PCS-C160/C160P) itself; the compact processor (PCS-P160/P160P) sends the setup command only.

SIRCS signal :

The IR receiver of the camera (PCS-C160/C160P) receives the SIRCS signal that is then sent to the compact processor (PCS-P160/P160P) after the carrier component is removed.

Note

Whether the IR receiver of the camera (PCS-C160/C160P) or that of the compact processor (PCS-P160/P160P) is used for receiving the SIRCS signal, is determined by the system configuration and the user setup. (Refer to Operating Instructions.)

LOCK signal :

The LOCK signal is used for the compact processor (PCS-P160/P160P) to recognize whether the camera (PCS-C160/C160P) and the compact processor (PCS-P160/P160P) are connected directly or by using an extension cable.

GND level : Direct connection

Open : Connection using an extension cable

2. Interface between compact processor (PCS-P160/P160P) and remote commander (PCS-R160): Infrared ray

The IR receiver on the front panel of the compact processor (PCS-P160/P160P) receives the SIRCS signal that is transmitted from the remote commander (PCS-R160).

Note

Whether the IR receiver of the camera (PCS-C160/C160P) or that of the compact processor (PCS-P160/P160P) is used for receiving the SIRCS signal, is determined by the system configuration and the user setup. (Refer to Operating Instructions.)

3. Interface between camera (PCS-C160/C160P) and remote commander (PCS-R160) : Infrared ray

The IR receiver on the front panel of the camera (PCS-C160/C160P) receives the SIRCS signal that is transmitted from the remote commander (PCS-R160). The SIRCS signal is then sent to the compact processor (PCS-P160/P160P) after the carrier component is removed.

Note

Whether the IR receiver of the camera (PCS-C160/C160P) or that of the compact processor (PCS-P160/P160P) is used for receiving the SIRCS signal, is determined by the system configuration and the user setup. (Refer to Operating Instructions.)

4. Interface between compact processor (PCS-P160/P160P) and external microphone (PCS-A300/option): Mini-jack

Power :

Power of about 2.9 V DC is supplied to an external microphone (PCS-A300) from the compact processor (PCS-P160/P160P). (Plug-in Power)

Audio signal :

The audio signal of −33 dBs from external microphone is input to the compact processor (PCS-P160/P160P).

3-1-2. Function of Compact Processor (PCS-P160/P160P)

1. User interface functions

- LED display of operating status
- Receiving and decoding of the SIRCS signal from the remote commander (PCS-R160)
- Generation and output of the menu display
- Input and selection of video signals
- Receiving and demodulation of infrared video signals (AV-Link)
- Output of the video signals
- Input and selection of audio signals
- Pick-up of sound by the built-in microphone
- Output of the audio signals
- Generation and output of the ringer and other sounds
- Control of the camera (PCS-C160/C160P)
- Generation and output of the SIRCS signal for monitor control
- Data reading/writing of the memory stick
- Control from external equipment depend on serial interface and LAN interface

2. Communication functions

- Compression and coding of input video signals
- Compression and coding of input audio signals
- Generation of the remote terminal control data
- Multiplexing of video, audio and T.120 input data, and creation of transmission frame before sending out to line
- Control of lines (ISDN, V.35) and data transmitting/receiving
- LAN (100 BASE-TX, 10 BASE-T) interface control and data transmitting/receiving
- Frame detection and separation from the received data from the line
- Execution of the control data that is supplied from the remote terminal
- Decoding and decompression of audio data
- Decoding and decompression of video data
- Cancellation of audio echo

3-1-3. Function of Respective Boards

- IPM-92A board, IPM-93A board
  Receives the infrared video signal (AV-Link)
- DE-55 board
  Demodulates the infrared video signal (AV-Link)
- RX-47A board
  Receives the SIRCS signal that is supplied from the remote commander (PCS-R160)
- CN-2143 board
  Connector for memory stick
- EX-816 board
  Relay board between the MA-107/107P board and optional board
- IF-823 board (PCS-I160/option) or IF-824 board (PCS-I161/option)
  Controls the line (ISDN 4B expansion or V.35) and data transmitting/receiving
- MA-107/107P board
  All other functions

Block diagram of the compact processor (PCS-P160/P160P) is shown in Fig. 3-1. Frame diagram of the compact processor (PCS-P160/P160P) is shown in Fig. 3-2.

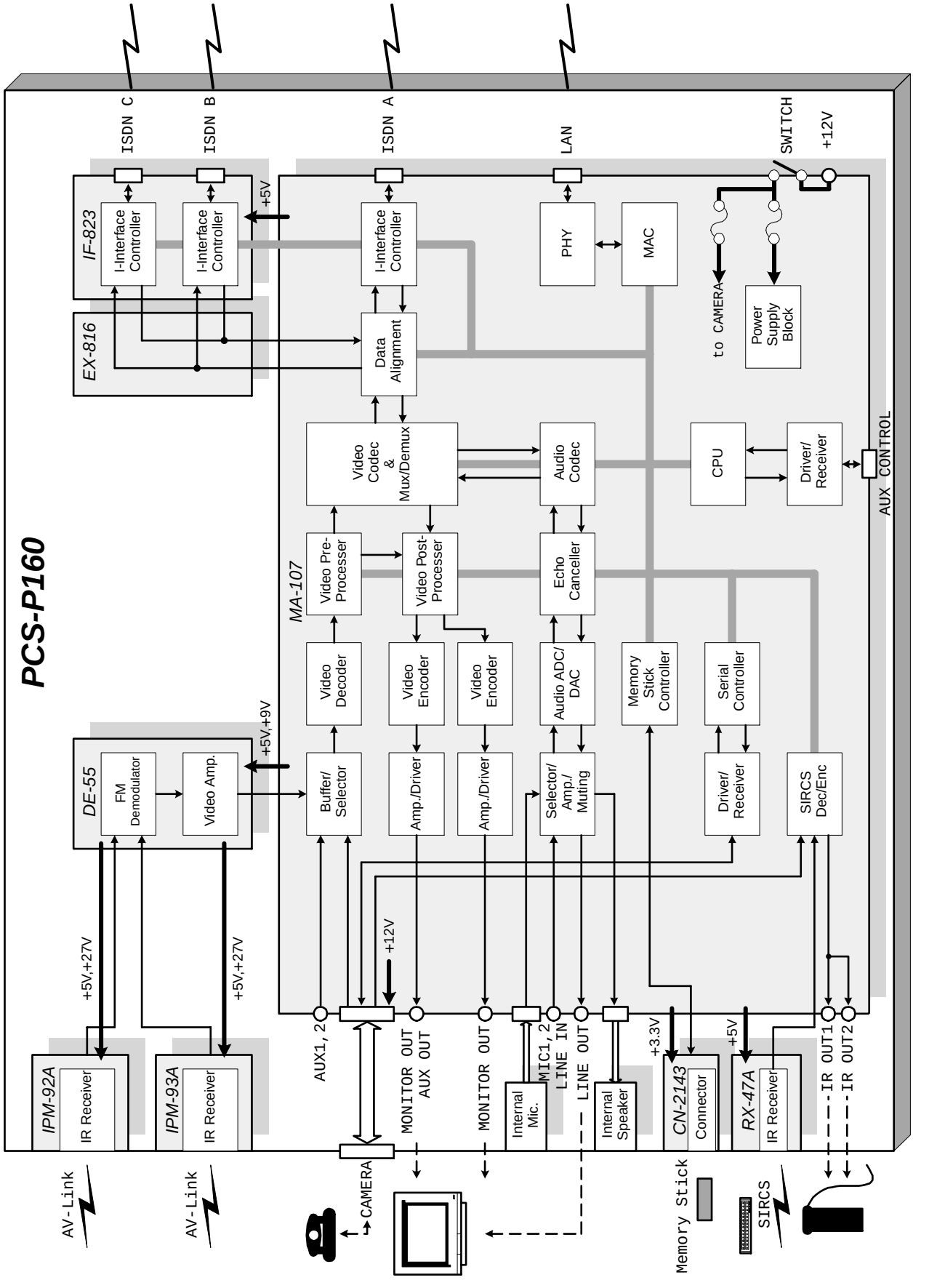


Fig. 3-1 PCS-P160/P160P Block Diagram

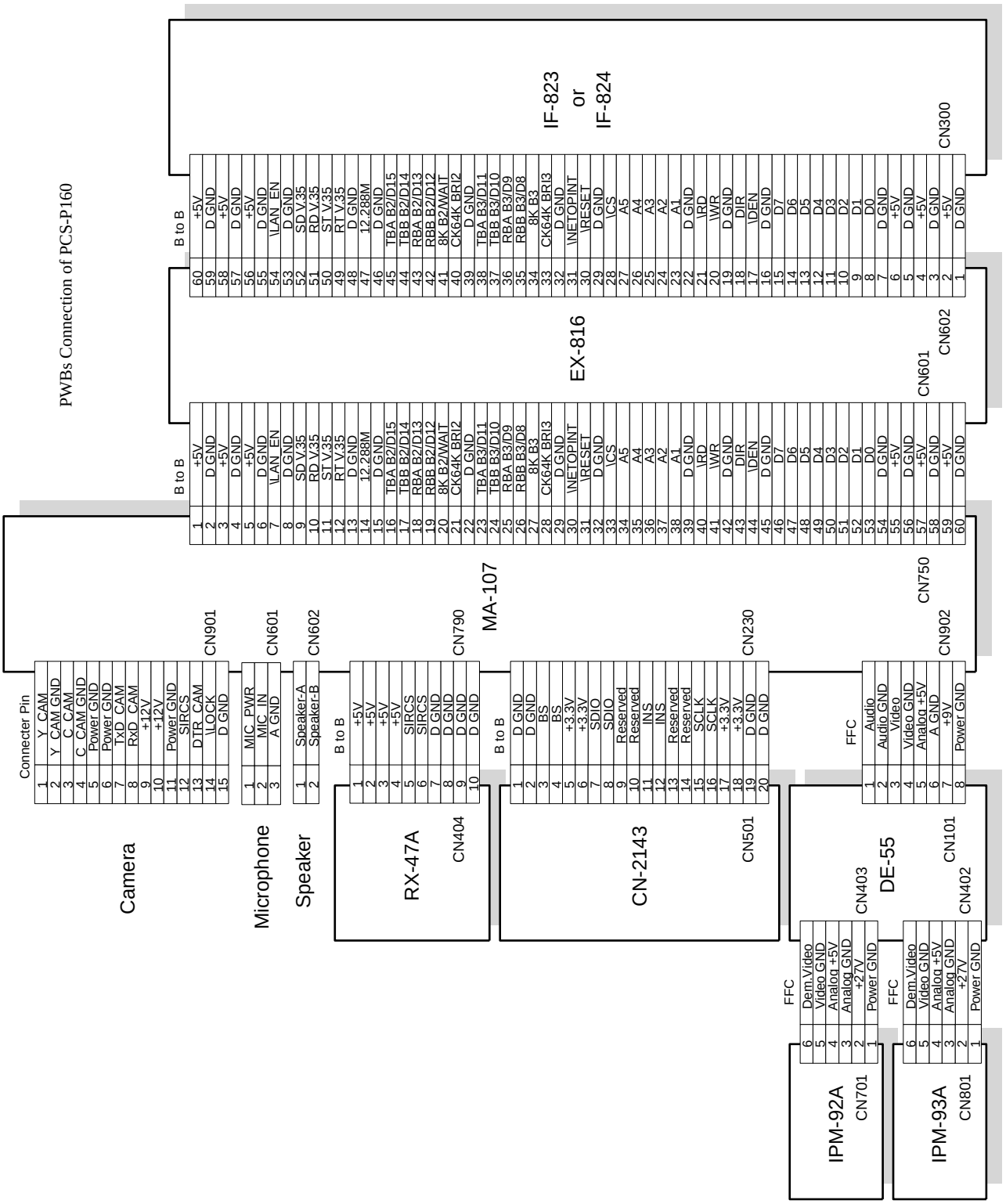


Fig. 3-2 PCS-P160/P160P Frame

3-2. Circuit Description of the Respective Boards

3-2-1. Overall Function of MA-107/107P Board

The MA-107/107P board has the functions of all operations of the PCS-1600/1600P system except for receiving and demodulation of the infrared video signal (AV-Link), receiving of the SIRCS signal from the remote commander, the optional BRI 4B and V. 35 interface. Most of the external input/output connectors are attached to the MA-107/107P board directly. The block diagram of the MA-107/107P board is shown in Fig. 3-3.

Dividing the MA-107/107P board into functional blocks

The MA-107/107P board circuit can be divided into the following blocks (refer to Fig. 3-4).

CPU block:

The CPU block consists of the CPU, Flash Memories, SDRAMs, system/bus control circuit, buffers, AUX Control port line driver/receiver and camera control line driver/receiver. It controls the entire circuit of the PCS-1600/1600P system.

MS block:

MS block is the Memory Stick interface which consists of the Memory Stick Controller IC. It also performs detecting of the memory sticks and over-currents.

ETH block:

The ETH block is the Ethernet (10BASE-T/100BASE-TX) interface which consists of the Fast Ethernet Controller (MAC) and Physical Layer Device (PHY).

SIRCS block:

The SIRCS block consists of microcontroller for the decoding/encoding of the receiving SIRCS signal. It decodes the SIRCS signal that is supplied from the remote commander via the camera (PCS-C160/C160P) or the RX-47A board, and encodes/outputs the monitor control the SIRCS signal that is to be output to the IR repeater terminal.

NETIF block:

The NETIF block consists of the data aligning IC and buffers. It aligns the serial data between the optional board and the VCP block. It also performs switching of the interfaces in accordance with the optional board in use.

BRI block:

The BRI block consists of the I-Interface control IC, SRAMs and transformers for ISDN BRI lines. It performs transmission and receiving the BRI-2B line data and the call control.

PWR block:

The PWR block consists of the DC-DC step-down converters, voltage regulators and LED illuminating/flashing circuit. It generates the various voltages that are required in the PCS-1600/1600P from the DC12 V power supply voltage and controls on/off of these powers.

http://getMANUAL.com

VCP block:

The VCP block consists of the Video Communication Processor, SRAMs and DRAMs. It performs frame detection and multiplexing/demultiplexing of the communication data. It also performs compression/decompression, coding/decoding, P-in-P display creation and split display picture creation of the video data.

VIA block:

The VIA block consists of the Video Input ASIC and SDRAM for buffer. The ASIC contains the Temporal Filter and Scaller circuits, and they performs the pre-filtering process to be the compression/coding of the input video signal.Its also has functions of still picture of read/write host interface and I2C interface from the CPU.

VOA block:

The VOA block consists of the Video Output ASIC and SDRAM for buffer.
The ASIC has functions of the Scaller, ε-Filter, graphics (menu) and still picture display, and they performs overlaying of the graphics to the video data that has been decoded and expanded, and displaying process of P-in-P creation. It also has I2 C interface.

VIDAD block:

The VIDAD block consists of the Video Decoder. It performs selection of the video input signal and conversion it into the Rec.656 data format.

VIDDA block:

The VIDDA block consists of the Video Encoder, Low Pass Filter and Video Driver. It performs elimination of high frequency signals, level setting and driving in 75Ω for the video signal that is converted to D/A after D/A conversion with video encoder.

AC block:

The AC block consists of two pairs of DSP and SRAM, and the serial timing signal generator circuit that controls the serial timing between DSPs. It performs compression/decompression and coding/ decoding of the audio data. It also makes the ringer tone and operating tone etc,.

EC block:

The EC block consists of two pairs of DSP and SRAM. It removes acoustic echo and reduces audio noise.

AUANA block:

The AUANA block consists of the audio AD/DA converter and audio amplifier. It performs selection of the input audio signals, generation of the applied voltage to the microphone and muting of the audio output signal.

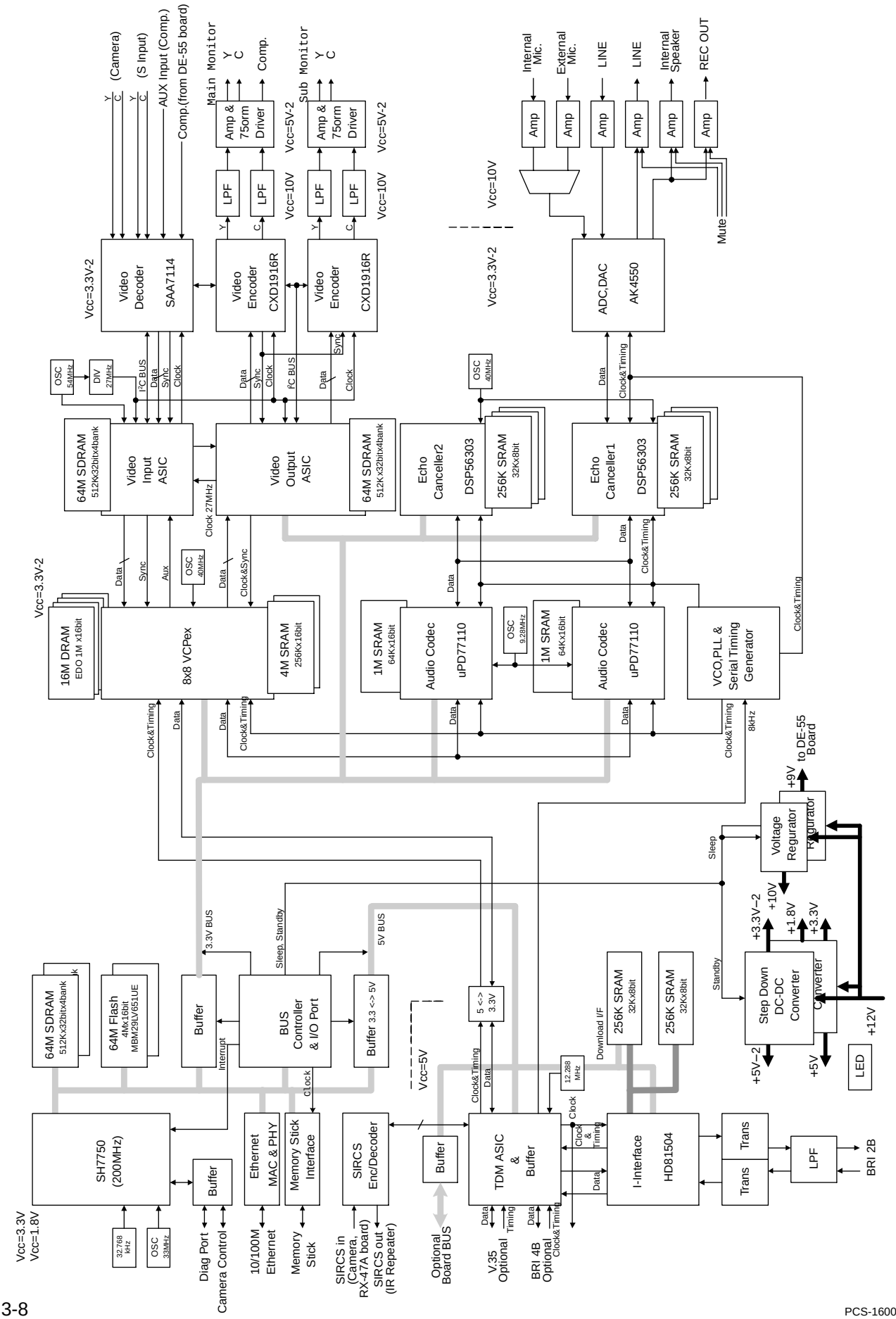


Fig. 3-3 MA-107 Board Block Diagram

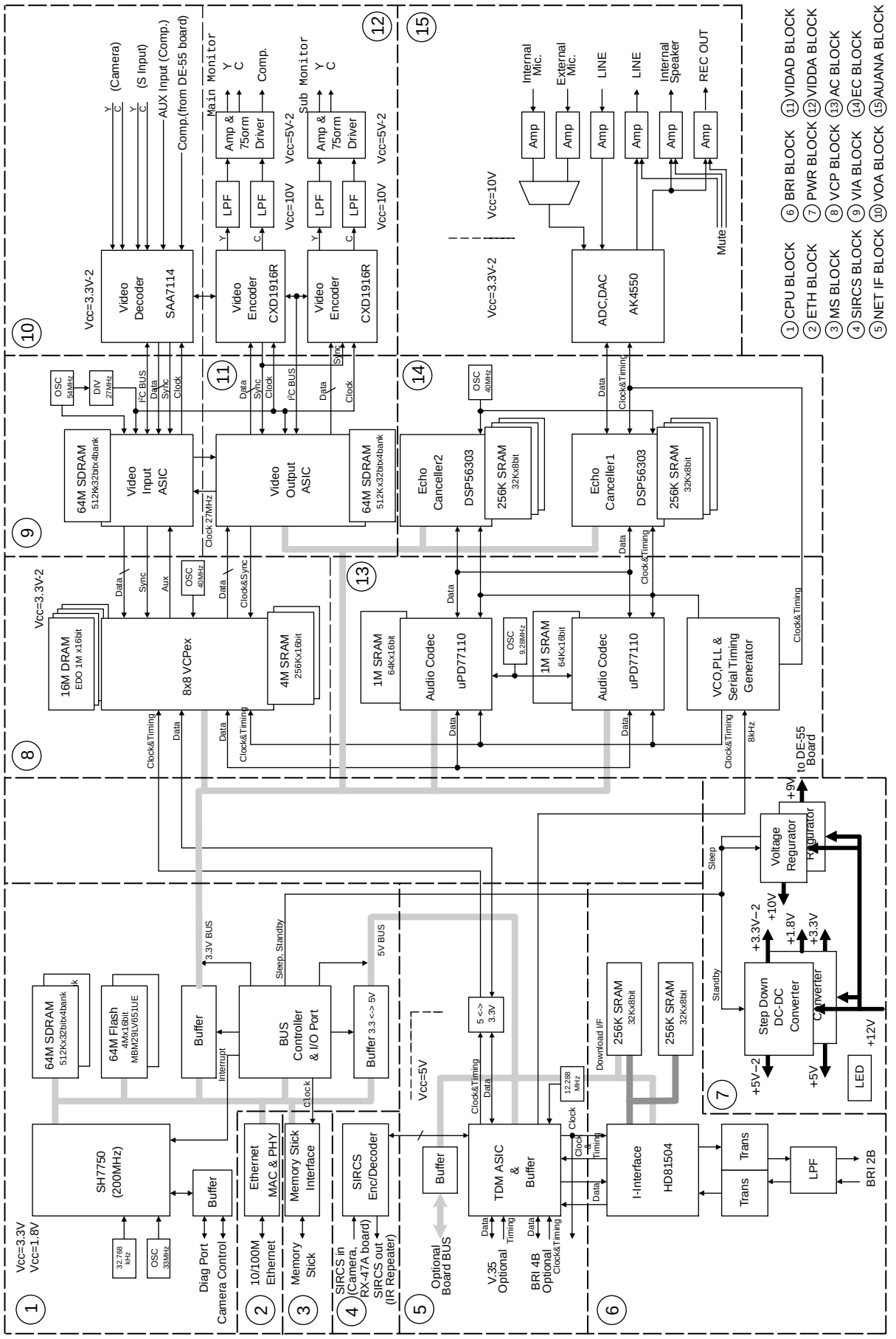


Fig. 3-4 MA-107 Board Block Function Diagram

[CPU block]

In the CPU block, the Hitachi SH-4 (HD6417750BP200) CPU (IC100) is used in the following modes of operation.

Clock operation mode : Mode 0
- with EXTAL input = 33 MHz, CKIO output = 50 MHz and internal clock = 200 MHz

Memory bus width of area 0 : 32 bits
- The bus width of the flash memory that connected to CPU is set to 32 bits.

Data format : Big Endian
- The order of the bytes of the data is set to big endian.

The other detailed mode setups are set by the internal register. Above-described mode is set according to the state of pin-MD0 to pin-MD8 when the CPU is resetting (these pins are used for other purposes in modes other than reset.) Because most pins are used as output pins during normal operation (used as input pins during reset), connecting the pull-up resistors or pull-down resistors is sufficient for setting. However, because pin-MD2 is used as the input pin (RxD2) during normal operation, the some of output pin (s) that connected to this IC must be controlled to the desired conditions or high impedance during reset. In the CPU block, output of the line driver (IC200) that is connected to pin-MD2/RXD is controlled to be high impedance when reset of the CPU is released.

SH-4 has the built-in timer, interrupt controller, memory controller, real-time clock and serial controller. Therefore, the SH-4 can be operated by connecting the memories only. The operating status of the CPU can be output to terminals by connecting the line driver/receiver to the serial controller input/output.

Fig.3-5 shows the connection between the CPU, memories and the PCMCIA buffers. As the memory, two (IC101, IC102) 64 Mbit (4 M × 16 bit) Flash Memories and two (IC103, IC104) 64 Mbit (512 K × 32 bit × 4 banks) synchronous DRAMs are used. The flash memories are used for storing the program and parameters. SDRAMs are used as the work area. The operating clock (33 MHz) is supplied from X100. The clock signal (32768 Hz) for the real-time clock is generated by using the crystal oscillator (X101) connected to IC100.

The reset signal for the CPU and flash memories is generated by monitoring the +3.3 V potential with the power voltage watchdog IC (IC115). The flash memory requires 20 microseconds after it is reset until it can be operated. It means that a sufficient delay time must be given to the reset signal that is input to the CPU so that the Flash Memory data can be read immediately after the CPU starts up.

Input and output ports of the serial controller are connected to the AUX Control port via the line driver/ receiver (IC200). This enables the diagnostics software to be operated by activating the minimum circuitry around the CPU. The AUX Control serial port consists of the data transmission and reception lines only, and no control lines.

Fig.3-6 shows the buses signals that control the respective blocks. The block controlling buses are divided into the 5 V bus and 3.3 V bus.

5 V bus : The bus line that controls the block that operates on +5 V power supply voltage.
- The Ethernet, BRI and NETIF blocks and optional board. They can operate even in the Standby state.

3.3 V bus : The bus line that controls the block that operates on +3.3 V-2 power supply voltage.
- The VCP, VIA, VOA, VIDDA, AC and EC blocks.

They do not operate in the Standby state.

The bus control PLD (IC110) has the follwing functions:
Power supply control and reset control. Generation of the buffer control signals that are suited to the bus cycle by startup by the CPU. Generation of the access control signals of each devices. Bus wait control for the CPU. Encoding of the interrupt priority levels and interrupt control such as masking some interrupts. The optimum setup for the bus cycle of each block which the CPU has start up, is performed by the register internal of the CPU.

Circuitry whose power is turned off during the Standby state is connected to IC110 via the bus switches (IC111, IC112) that operate on +3.3 V-2 power supply voltage.

The operating power supply voltage is +3.3 V. The circuit blocks whose power is turned off during the Standby state and the interface buffers operate on +3.3 V-2 power supply voltage.

[MS block]

The MS block consists of Memory Stick Controller IC (IC230), Memory Stick power supply controller IC (IC231) and board-to-board connector (CN230), and for that is connected to the Memory Stick connector board (CN2143).

Access controls and power supply controls from the CPU to the Memory Stick are performed through by the IC230, and power on/off controls and over-current detection are performed by IC231.

Interrupt from PHY of the ETH block is sent to the CPU block by using the genereal-purpose input ports. Also, flashing control of the Standby LED is performed by using the general-purpose output ports.

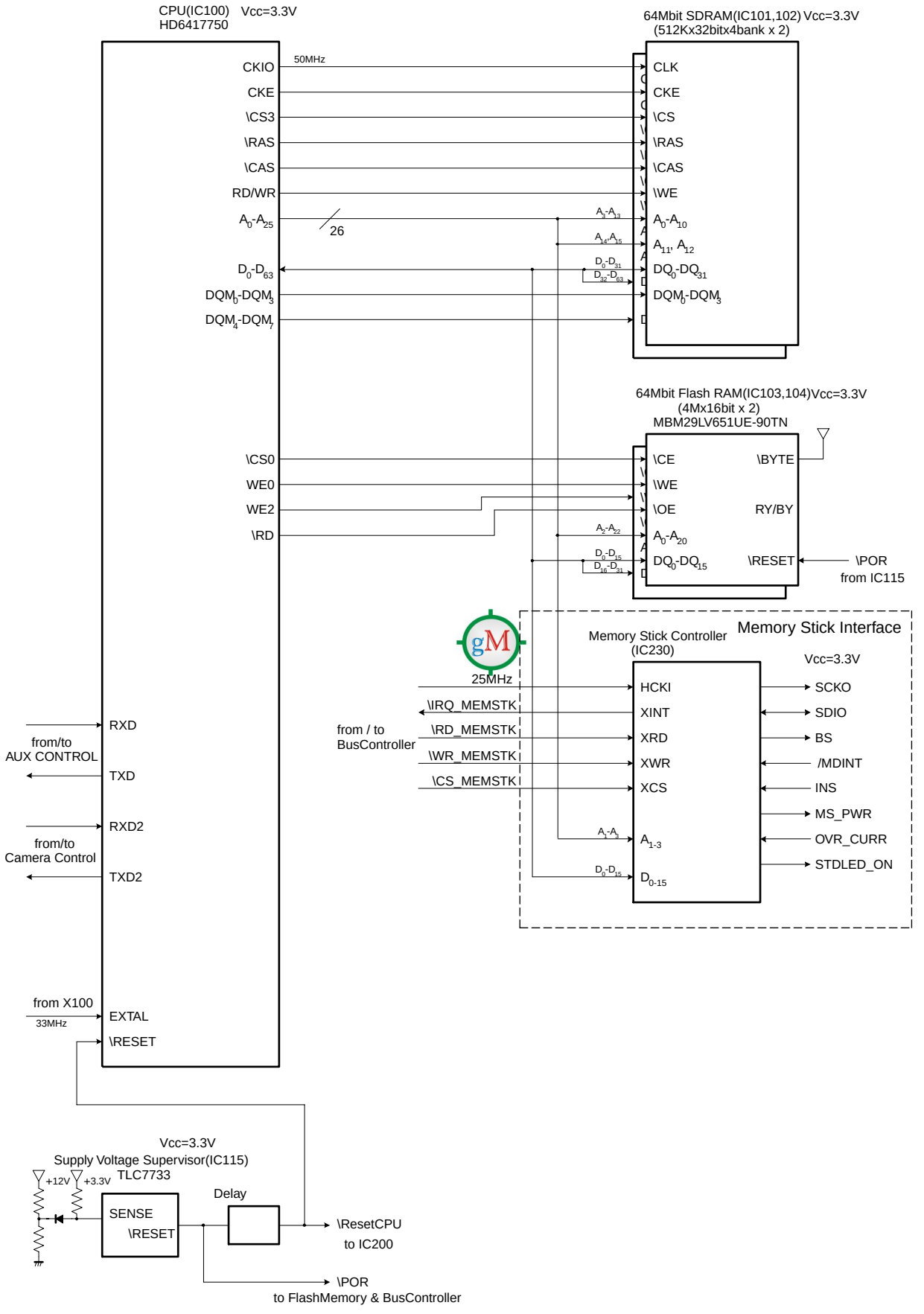


Fig. 3-5 Memory and Memory Stick I/F of CPU Block

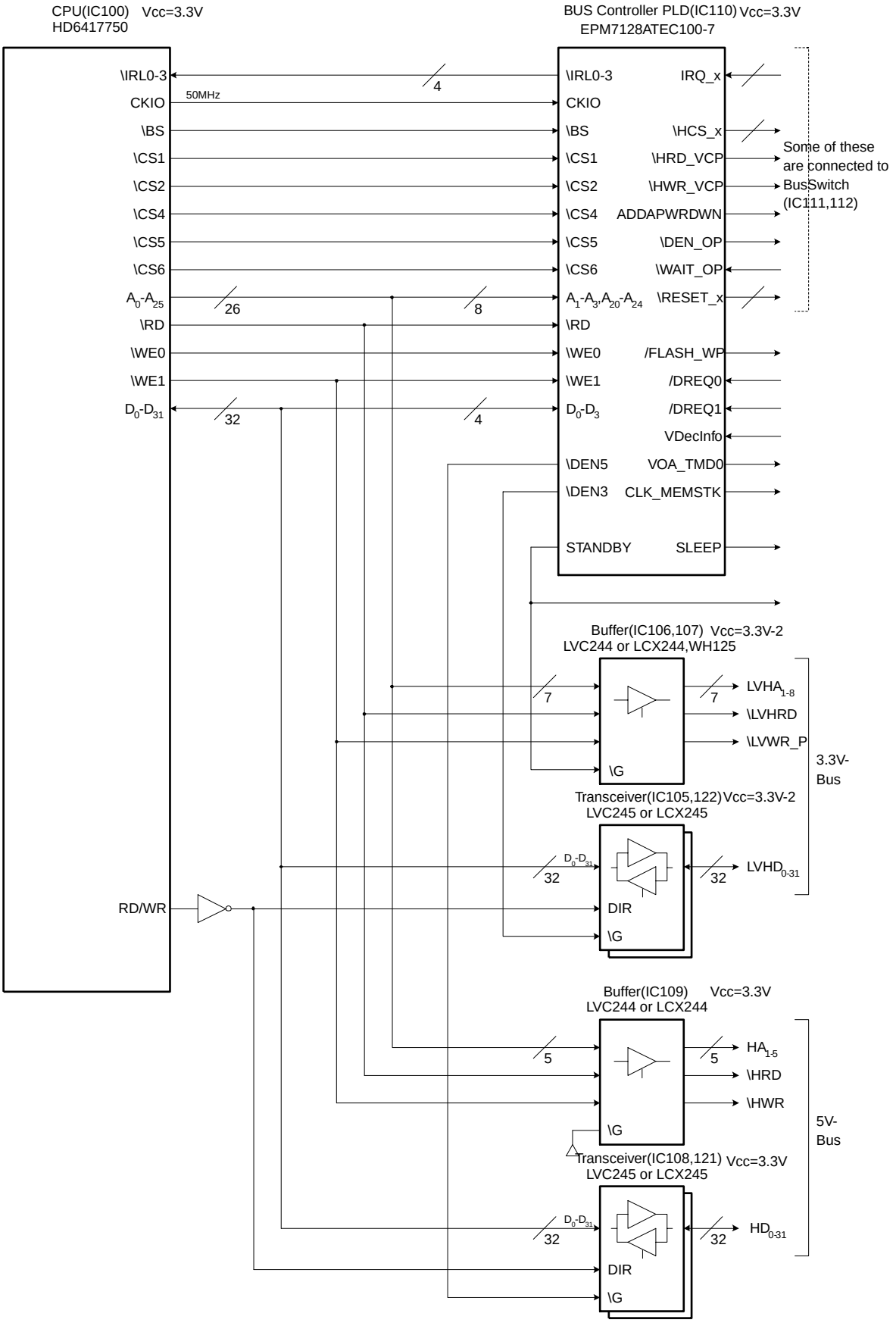


Fig. 3-6 System Bus I/F of CPU Block

[ETH block]

ETH block is the 10BASE-T/100BASE-TX interface, that consists of Fast Ethernet Controller IC (IC250), Fast Ethernet PHY IC (IC251) and modular jack built-in pulse transfoemer (CN251). (Refer to Fig.3-7)

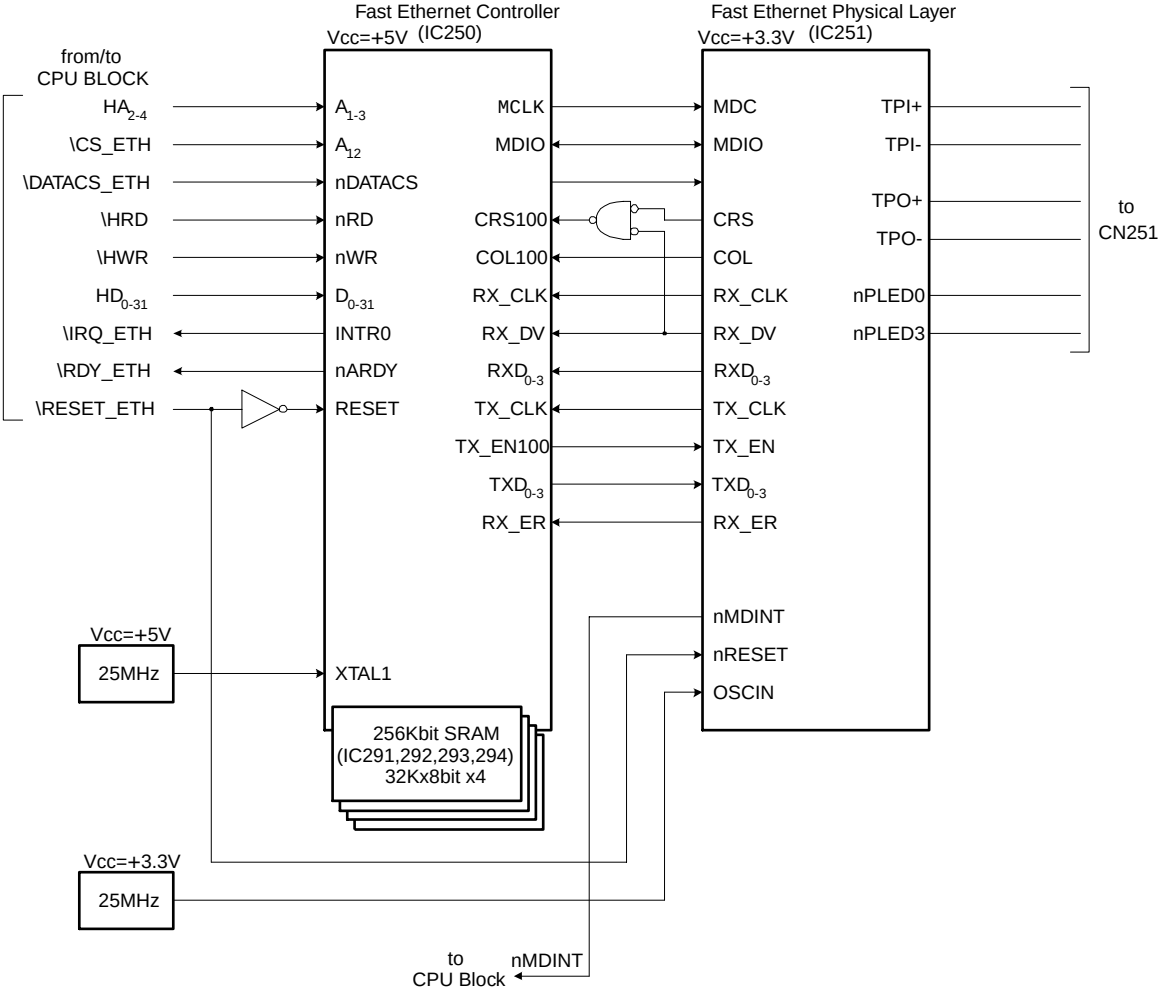


Fig. 3-7 Ethernet Block

[SIRCS block]

The SIRCS block consists of the selector circuit (IC781, IC782) that selects the received SIRCS signal from either the camera (PCS-C160/C160P) or the RX-47A board, and the microcontroller that decodes the selected the received SIRCS signal and encodes (with modulating by the carrier wave) the SIRCS signal to be transmitted from IR-OUT (refer to Fig. 3-8). Because the microcontroller (IC780) has only a general-purpose port, it cannot be connected directly to the CPU bus. The microcontroller (IC780) is connected to the CPU bus indirectly by connecting it to the I/O port of TDM-ASIC (IC750 of NETIF block). The interrupt signal is latched internal of IC110 (CPU block) so that the level triggered interrupt are realized.

The operating clock (4 MHz) of the microcontroller (IC780) is generated by the crystal oscillator (X780).

The SIRCS block is reset by the “RES_ALL” signal that is supplied from the CPU block.

It operates on +5 V power supply voltage.

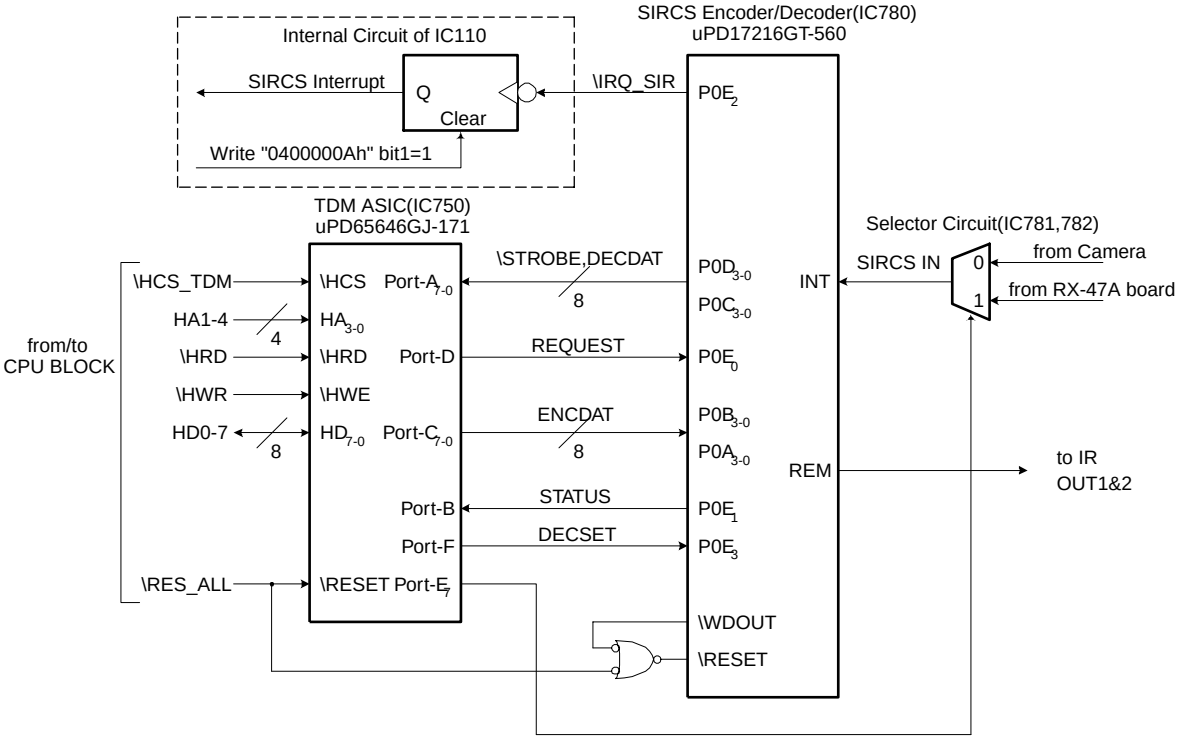


Fig. 3-8 SIRCS Block & Connecting with Bus

[NETIF block]

Fig. 3-9 shows connection of the NETIF block. The NETIF block converts the array of the line data that is sent and received between both the BRI block and the optional board and the VCP block, into the format that suits the respective blocks. It also performs switching of the optional boards interfaces in accordance with the optional board in use.
Converting the data array means to convert the multiple pairs (a pair of send/receive data for each BIR-1 B) of the serial data that is input and output to and from the VCP block. When the V.35 interface is used, the serial data whose clock changes continuously in accordance with the communication speed of the communication line in use, is converted to the serial data that has the stable clock frequency (3.072 MHz) of the VCP block circuit and is not cotinuous in every 8 kHz frame.The reverse conversion is also included. These conversion operations are performed internal of the TDM_ASIC (IC750). In addition to the above-described operations, the TDM_ASIC (IC750) performs the following operations : generation of the 8 kHz clock that is synchronized with the line and is supplied to the AC block; generation of the 12.288 MHz clock that is used as the operating clock both of the BRI block and the IF-823 board : and detection of the line speed (including generation of interrupt when the line speed changes) for the V.35 interface.

The TDM_ASIC (IC750) is partly used for the input/output port that controls and detects the respective blocks of the SIRCS, BRI, AUANA and PWR.

The operating clock signal (12.288 MHz) of the TDM_ASIC (IC750) is generated by the crystal oscillator (X750).

The NETIF block is reset by the “RES_ALL” signal that is supplied from the CPU block.

It operates on +5 V power supply voltage.

http://getMANUAL.com

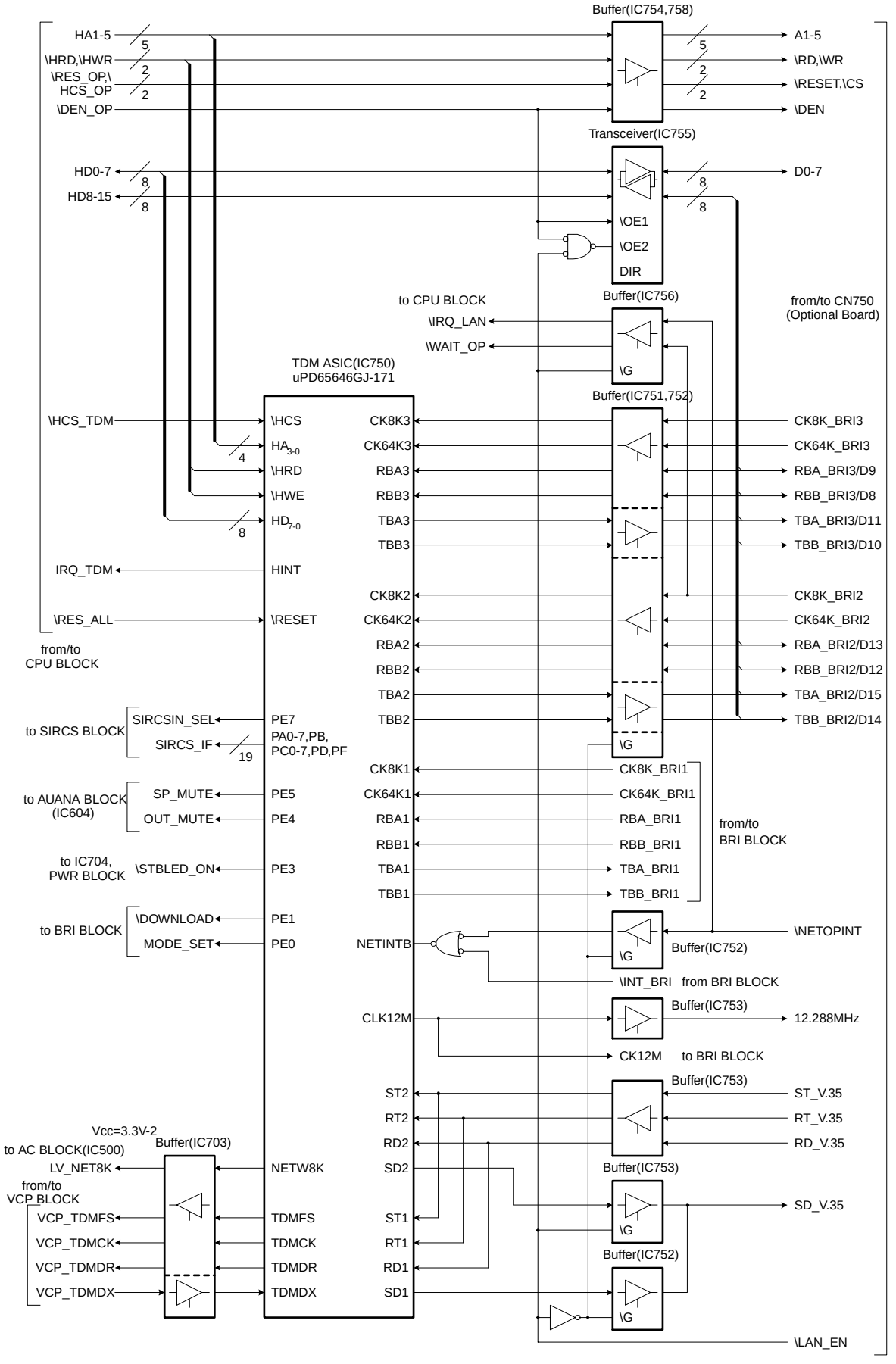


Fig. 3-9 NETIF Block

[BRI block]

The BRI block performs the BRI-2B line control and data transmitting/receiving. The BRI block consists of the following devices. The I-Interface control IC (IC800) as the central component of this block, the 256 kbit SRAM (IC801) where the Firmware for the I-Interface control IC (IC800) is stored, the 256 kbit SRAM (IC802) that is a work area RAM, the bus signal selector buffers (IC810, IC811) and SRAM address setting latches (IC808, IC809) that are used to download the Firmware to SRAM from the CPU, the latch circuit (IC806, IC805, IC803) to generate interrupts and to output the status to the CPU from the I-Interface control IC (IC800), and the circuit (IC803, IC804, IC807, IC812) to generate the signals that control the above-described circuit in response to the access from the CPU. (Refer to Fig. 3-10.)

Because the I-Interface control IC (IC800) starts its operation by executing the program codes that are stored in the SRAM (IC801), the Firmware must be downloaded to the SRAM (IC801) beforehand from the CPU. Downloading is performed by the following setup.

(1) Setting the SRAM interface output of the I-Interface control IC (IC800) to High-Z by putting the "RES_BRI" and "MODE_SET" signals active.
(2) Connecting the CPU system bus with the SRAM (IC801) via the bus signal selector buffer (IC810, IC811) and the SRAM address setting latches (IC808, IC809) by putting the "DOWNLOAD" signal active.
(3) Repeating writing the SRAM address into the latches (IC808, IC809) and writing the program code into the SRAM.

The interrupt signal to the CPU from the I-Interface control IC (IC800) is created when the I-Interface control IC (IC800) writes into the latch circuit (IC806, IC805, IC803) using the SRAM interface. This interrupt signal is once input into IC750 of the NETIF block and is multiplexed with the other interrupts, then is output as "IRQ_TDM". The interrupt signal is cleared when the "SDETCLR" signal goes active when the CPU reads the specific address. The interrupt signal status and the result of the SRAM check by the I-Interface control IC (IC800) can be read out from the CPU via the buffer (IC758). The information of the camera (PCS-C160/160P) is connected to the processor directly or not can be obtained by reading this buffer (IC758).

The interface with the telephone line contains a choke coil (FL800) as a countermeasure against EMI and pulse transformers (T201, T202) between the modular jack (CN800) and the I-Interface control IC (IC800). The line data is converted to two paires (A pair for transmission and reception respectively) of data that is synchronized with 64 kHz, and is transferred/received between the I-Interface control IC (IC800) and the NETIF block (IC750).

The operating clock signal (12.288 MHz) of the I-Interface control IC (IC800) is supplied from TDM_ASIC (IC750) of the NETIF block.
The BRI block is reset by the "RES_BRI" signal that is supplied from the CPU block.

It operates on +5 V power supply voltage.

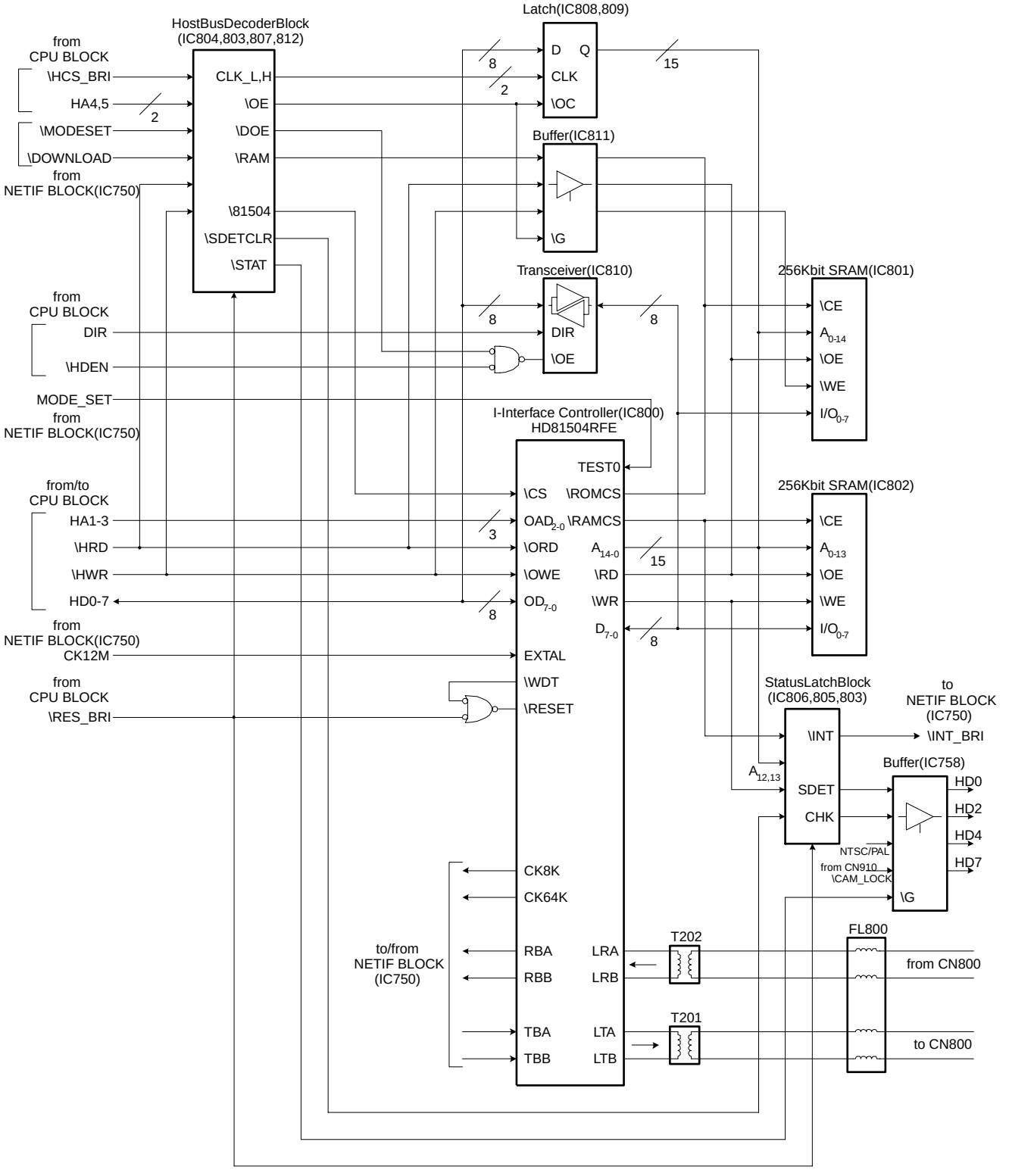


Fig. 3-11 PWR Block

[PWR block]

The following power supply voltages are generated from +12 V DC that is supplied from the AC adaptor.

+3.3 V : +3.3 V DC supply voltage supplies constantly
To the CPU, Memory Stick and Ethernet (PHY) blocks

+5 V : +5 V DC supply voltage supplies constantly
To the BRI, NETIF, SIRCS and Ethernet (MAC) blocks
To the RX-47A board and Optional board

+1.8 V : +1.8 V DC supply voltage supplies constantly
DC supply voltage for the exclusive use of the SH-4 (HD6417750BP200).
+1.95 V is accuracy supplied voltage.

+3.3 V-2 : +3.3 V DC supply voltage that is turned off during standby state.
To the VCP, VIA, VOA, AC and EC blocks, AD/DA converter section of the AUANA block

+5 V-2 : +5 V DC supply voltage that is turned off during standby state.
To the VIDIN block, 75 Ω driver section of VIDOUT block, the DE-55 board

+10 V : +10 V DC supply voltage that is turned off during sleep and standby states.
To all sections of the AUANA block except the AD/DA converter section, Low pass filter section of VIDOUT block

+9 V : +9 V DC supply voltage that is turned off during sleep and standby states.
To the DE-55 board

Fig.3-11 shows the PWR block configurations.
+3.3 V DC supply voltage is generated by IC900 (step-down converter), +5 V DC supply voltage is generated by IC901 (step-down converter) and +3.3 V-2 and +5 V-2 DC supply voltages are generated by IC902 (step-down converter), and these circuits consists of thier peripheral FETs, inductors and capacitors, which forms switching and smooting circuits. +10 V DC supply voltage is generated by IC904 (regulator) and +9 V DC supply voltage is generated by IC908 (regulator).
+3.3 V-2 and +5 V-2 DC supply voltages are turned on and off by controlling IC902 (step-down converter) using the “STANDBY” signal that is supplied from the CPU block. +10 V and +9 V DC supply voltages are turned on and off by controlling IC904 and IC908 (regulators) using the “SLEEP” signal that is supplied from the CPU block.
Power supply voltage of the camera (PCS-C160/C160P) is supplied +12 V DC from the AC adaptor directly via fuse for exclusive use of the camera.

“POWER” and “STANDBY” indicator LEDs are controlled to turn on and off as shown below in accordance with the “STANDBY” and “SLEEP” signals that are supplied from the CPU block.

SLEEP signal	STANDBY signal	→	“POWER” LED	“STANDBY” LED
LOW	LOW	→	ON	OFF
Don't care	HIGH	→	OFF	ON
HIGH	LOW	→	BLINK	OFF

Flashing of the LED is performed by the oscillator circuit consisting of IC905. “STANDBY” indicator LED can be controlled to flash by setting of the CPU in addition to the illuminating conditions as described above. (It is valid only when “STANDBY” LED is in OFF.)

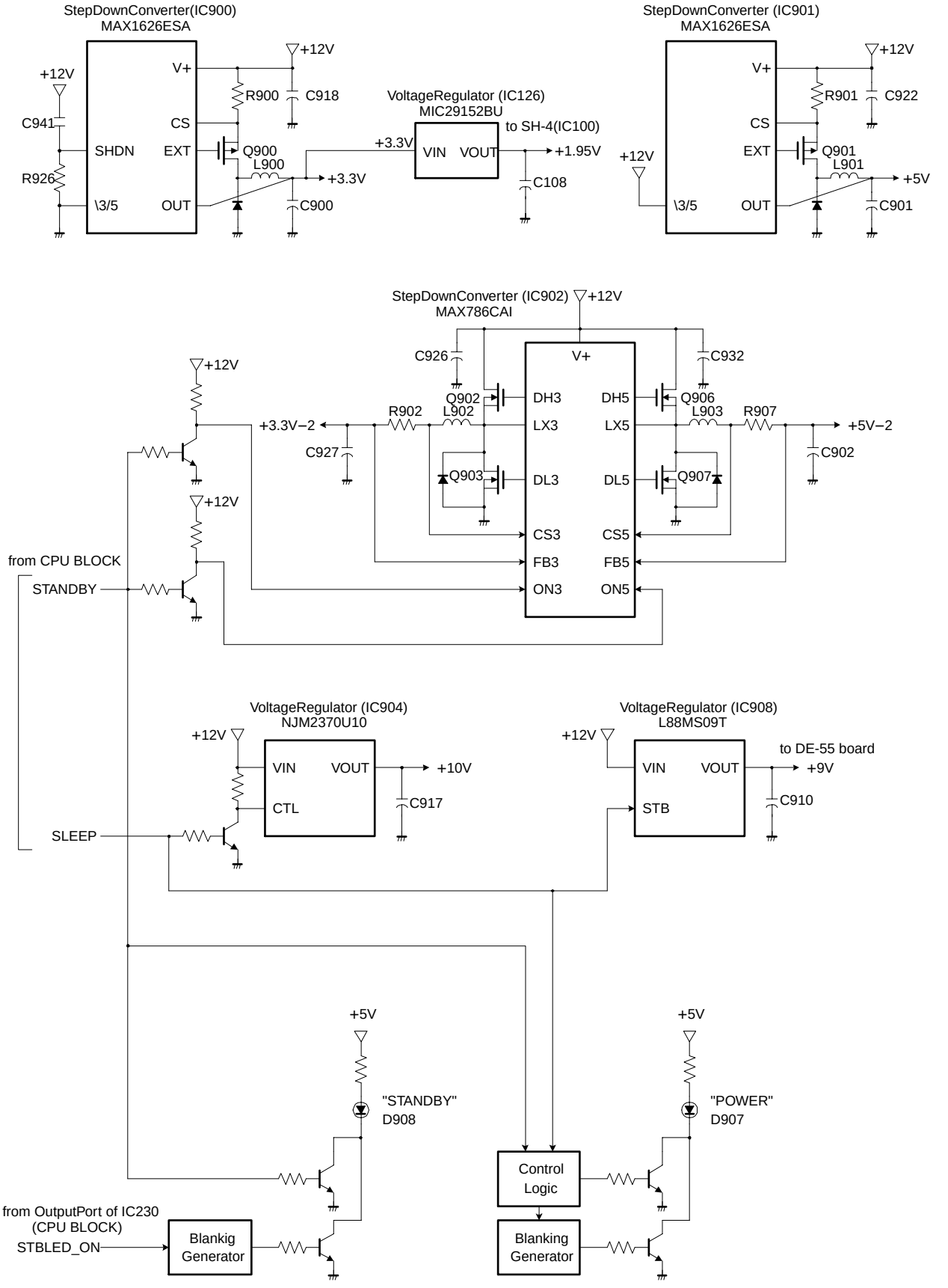


Fig. 3-11 PWR Block

[VCP block]

The VCP block consists of the VCPex (IC300), two 4 M-bit SRAMs (IC301, IC302) that are used for storing program code and as the work area RAM, and four 16 M-bit DRAMs (IC303 to IC306) that are used as the picture data buffer.
The VCP block has the following functions : separating the video data, audio data and other data from the received line data; multiplexing the transmitting video and audio data into the transmission data that is sent to the line; compression and decompression of the video signal ; generation of the P-in-P display ; and generation of the split display when multiple points are connected. The program code that is required to operate the VCPex (IC300) is downloaded from the CPU and saved in the SRAMs (IC301, IC302). Downloading is performed by the both softwares of the CPU and that of VCPex.

Fig.3-12 shows each connection with the VCPex (IC300) that to the system bus, to the AC block,to NETIF block, to SRAM (IC301, IC302) and to DRAM (IC303 to IC306). The operating clock (40 MHz) is supplied from the crystal oscillator (X300). Among connection with the system bus, READ/WRITE pulse uses the “HRD_VCP” and “HWR_VCP” signals that are exclusive to VCPex (IC300). The interrupt signal “IRQ_VCP” is also outputted here.

The line data is transmitted to and received from the TDM_ASIC (IC750) of the NETIF block in the form of a serial signal. The clock and frame sync signals are supplied from the TDM_ASIC (IC750). Audio data is transmitted to and received from the Audio Code ICs (IC520, IC530) of the AC block in the form of a serial signal. The clock and frame sync signals are supplied from the Serial Timing Generator (IC501). However, trigger signal that generates the frame sync signal is used from the “AUX6, AUX7” output of VCPex (IC300).

Video input data is supplied from the VIA block and video output data is sent to the VDA block. Fig.3-13 shows the video input/output signal interface of VCPex (IC300). The basic clock signal of video data input/output is 27 MHz clock that is supplied from the video system general clock driver IC (IC390) of the VIA block. Video input data is pixel data consisting of 8 bit luminance sigal and 8 bit chrominance signal that are supplied from the Video Input ASIC (IC350). 13.5 MHz pixel clock is also outputted from the VIA (IC350).

Video output data is pixel data consisting of 8 bit luminance signal and 8 bit chrominance signal, and blanking signal that are outputted to the Video Output ASIC (IC370).

13.5 MHz pixel clock, H sync signal, V sync signal and Field ID signal are also outputted from the Video Output ASIC (IC370).

Among of general-purpose ports “AUX0 to AUX7” of VCPex (IC300), “AUX3” is used to Low Pass Filter of the Video Input ASIC (IC350) and Enable/Disable of the Scaller, “AUX0 and AUX1” are used to ε-Filter of the Video Output ASIC (IC370) and Enable/Diable of Scaller, and “AUX4” is used as the input port of Field ID signal to the video output signal. As described in above, “AUX6 and AUX7” are used as the trigger output that generates the frame sync signal in a serial signal for AC block.

The VCP block is reset by the “RES_VCP” signal that is supplied from the CPU block.

It operates on +3.3 V-2 power supply voltage.

[VIA block]

The VIA block consists of the Video Input ASIC and SDRAM for buffer, and it has following functions.

- Temporal Filter and Scaller performs pre-filtering process for compression/coding of the video input signal.
- Sync separation function can separates the video decoder input signal from the internal sync signals. Therefore, all video signals except video decoder signal operates by video system general clock (27 MHz).
- It is host interface for read-out/write-in from the CPU that performs read/write and display functions for still picture.
- Two system output signals to the VIA block and VCP block. It can output by selecting the input signal either still picture or Video Decoder.
- I2C interface. In I2C interface of the VIA block, it performs setting of the Video Decoder.

[VOA block]

The VOA block consists of the Video Output ASIC and SDRAM for buffer, and it has following functions.

- Two system input from the VIA block and VCP block.
- Two system output of the Main Monitor and Sub Monitor.
- ε-Filter and Scaller performs filtering process of the display picture after it has been expanded.
- Composition of the P-in-P display.
- It is host interface for read-out/write-in from the CPU that performs read/write and display functions for still picture.
- I2C interface. In I2C interface of the VIA block, it performs setting of the Video Decoder.

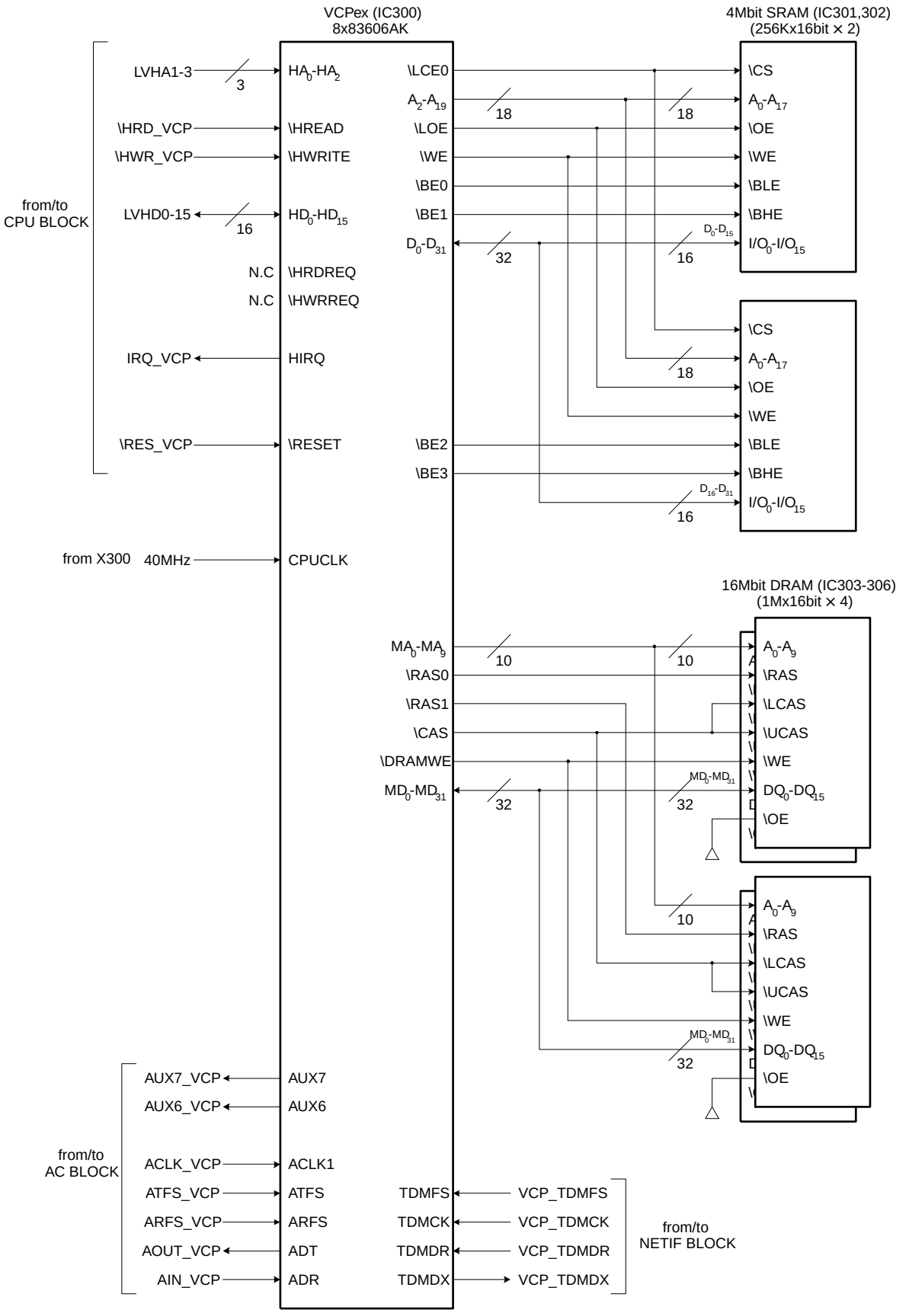


Fig. 3-12 Host I/F, TDM I/F and Audio I/F of VCPex

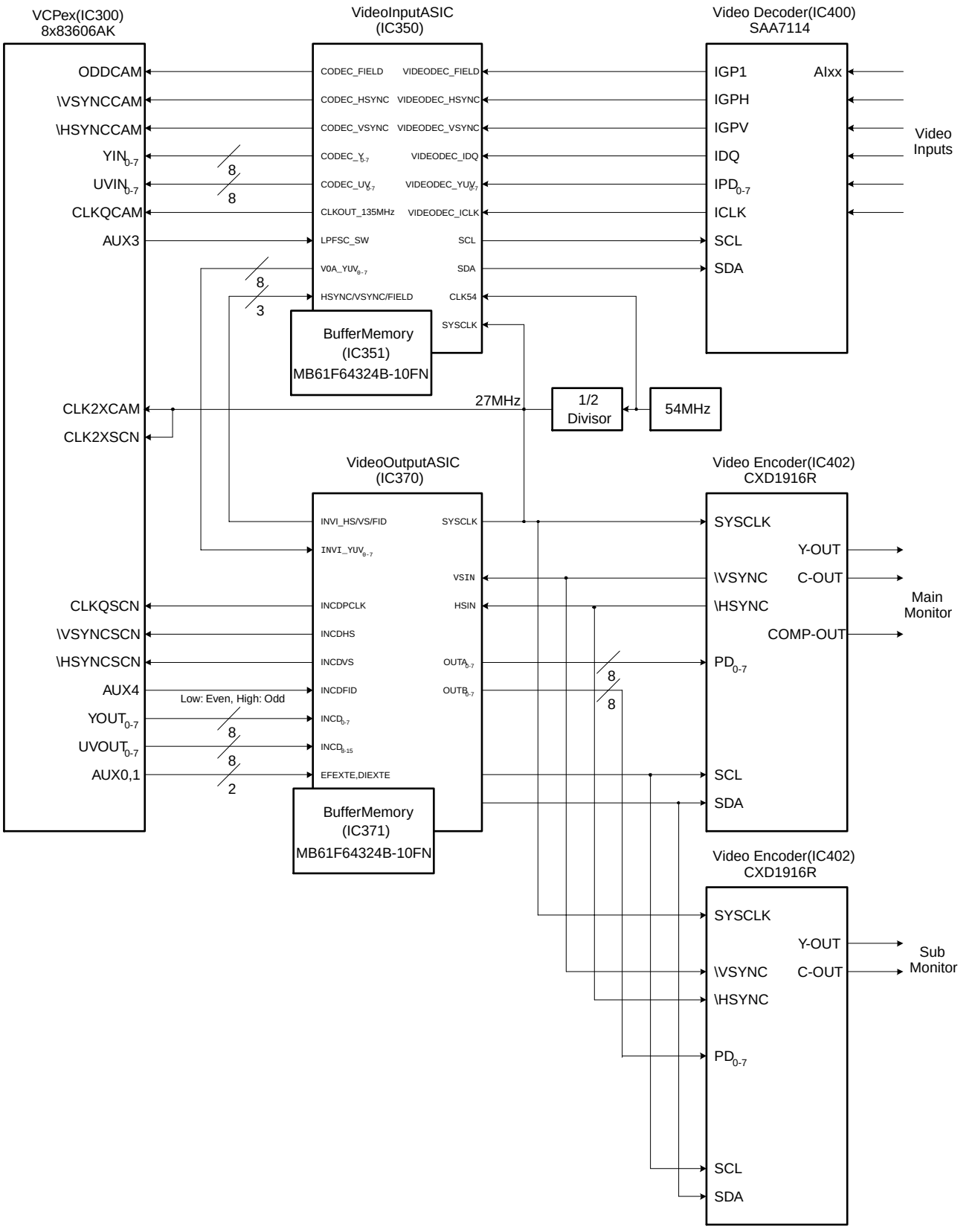


Fig. 3-13 VIDEO Input/Output Interface

[VIDAD block]

The VIDAD block performs the video input signal selection, A/D conversion and converting the signal to Rec. 656 format. All of these functions performs by the Video Decoder (SAA7114). (Refer to Fig.3-14.) It also informs to the CPU directly whether selecting video input signal is sent or not.

The CPU performs setting to the Video Decoder via I2C bus of the VIA block.

Power supply voltage at +3.3 V-2 is supplied to the Video Decoder circuit and +5 V-3 is supplied to the input analog circuit.

http://getMANUAL.com

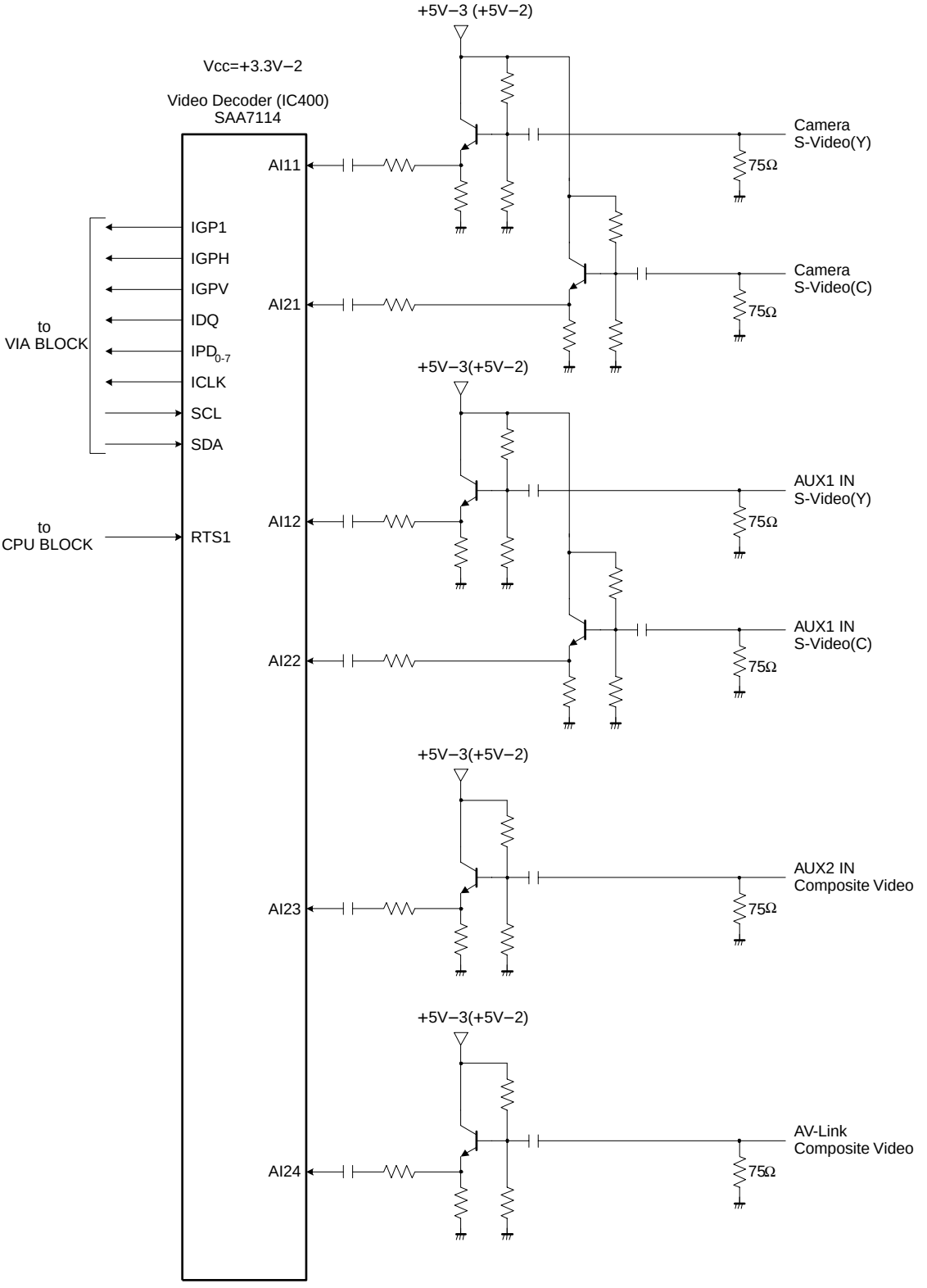


Fig. 3-14 Video Input Block (Analog)

[VIDDA block]

The VIDDA block performs that the digital video signal (Rec.656) sent from the VOA block is converted from digital to analog signal and buffering it by video amplifier stage, then driving the video signal in 75 ohm load. (Refer to Fig.3-15.)

Two video encoders uses for Monitor1 and Monitor2.

It operates on +3.3 V-2 and +5 V-2 power supply voltages.

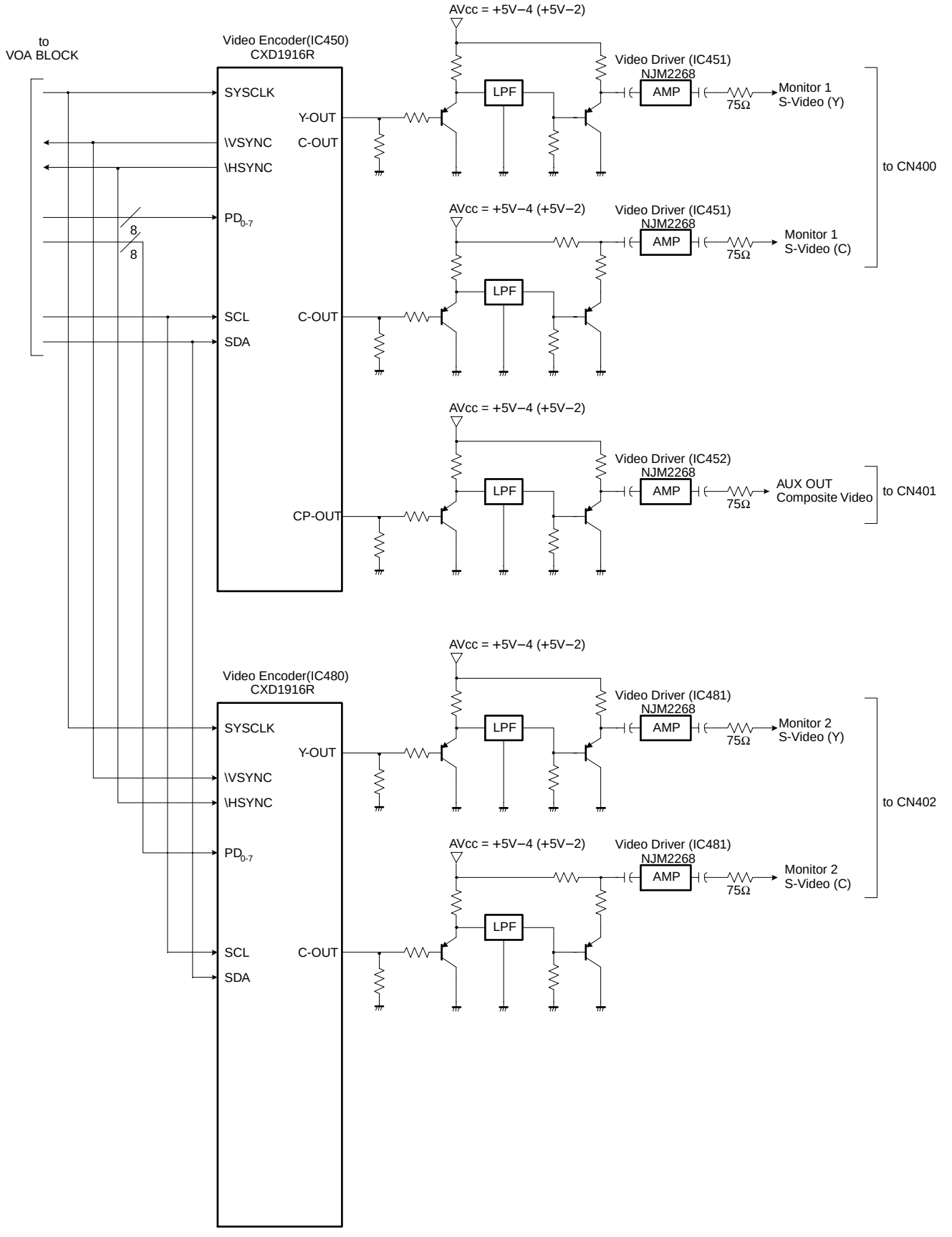


Fig. 3-15 Video Output Block (ANALOG)

[AC block]

The AC block consists of combination of the Audio Codec DSP (IC520) and 256 kbit-SRAM (IC521), combination of the Audio Codec DSP (IC530) and 256 kbit-SRAM (IC531), VC/PLL (IC500) and Serial Timing Generator (IC501).
The Audio Codec DSPs (IC520, IC530) have the function of compression/decompression, decoding/coding of the audio data and generation of ringer tone or operating tone. 256 kbit-SRAMs (IC521, IC531) are used as the data processing buffer of DSPs. The program code that is reqired to operate the DSPs, is partly downloaded from the CPU and stored in RAM internal of the DSP. (A part of the program code has been masked in DSP.) The operating clock (7.5 MHz) of the DSPs (IC520, IC530) is supplied from the crystal oscillator X510. Resetting is performed by the “RES_AC” signal that is supplied from the CPU block. (Refer to Fig.3-16.)
Input and output of the audio signal to and from the DSPs (IC520, IC530) are performed in the form of a serial signal in all. Connection of the serial signal is shown in Fig.3-18. Serial signal of the EC block side performs receiving the before-compressed/coded (transmission) audio data from the Echo Canceller DSP (IC570) and transmission of the decompressed/decoded (receiving) audio data and other audio data such as ringer tone, etc., to the Echo Canceller DSP (IC570). Serial signal of the VCP block side performs transmission of the decompressed/coded (transmission) audio data to the VCPex (IC300) and receiving the before-decompressed/decoded (receiving) audio data from VCPex (IC300). The clock signal and the frame sync signals for the serial signals are generated by Serial Timing Generator (IC501). The frame sync signals that connection between AC block and EC block are synchronized with 8 kHz on the line, also the frame sync signals that connection between AC block and VCP block are synchronized with the trigger signal send from VCPex (IC300).
Serial Timing Generator (IC501) generates the serial timing signals using between the AD/DA-Converter (IC600) and Echo Canceller DSP (IC570), 8 kHz clock signal by using for internal processing of the Audio Codec DSPs (IC520, IC530), and 16 kHz clock signal by using for internal processing of the Echo Canceller DSPs (IC570, IC540).
The VCO/PLL (IC500) generates at 8.192 MHz clock that is phase-locked by PLL to 8 kHz clock (“LV_NET8K”) which is synchronized with the line signal sent from the NETIF block, then 8.192 MHz cock is sent to the Serial Timing Generator (IC501). The VCO/PLL (IC500) is controlled by the “/RES_AUDCLK” signal so that it makes to stop the oscillation during sleep mode.
It operates on +3.3 V-2 power supply voltage.

[EC block]

The EC block consists of combination of the Echo Canceller DSP1(IC570) and 256 kbit-SRAMs (IC571 to IC573), and combination of the Echo Canceller DSP2 (IC540) and 256 kbit-SRAMs (IC541 to IC543), so they performs removing of acoustic echo and reducing of audio noise. 256 kbit-SRAMs (IC571 to IC573, IC541 to IC543) are used for both data and code of the DSPs. The program code that is required to operate the DSP is downloaded from the CPU and stored in RAM internal of the DSP or 256 kbit-SRAM (IC571 to IC573, IC541 to IC543). The operation clock signal (40 MHz) of the DSPs (IC570, IC540) is supplied from the crystal oscillator (X540). Resetting is controlled by the “RES_EN” signal that is supplied from the CPU block (refer to Fig.3-17). Input and output of the audio signal to and from the DSPs (IC579, IC540) are performed in the form of a serial signal in all. Connection of the serial signal is shown in Fig.3-18. The serial signal at AC side block of the Echo Canceller DSP1 (IC570) perfroms transmission of the before-compressed/coded (transmission,after echo is removed) audio data to the Audio Codec DSPs (IC520, IC530), and receiving the decompressed/decoded (receiving) audio data and other audio data such as ringer tone etc. Also, between Echo Canceller DSP1 (IC570) and Echo Canceller DSP2 (IC600), the data that is required to share the processing is sent and received. The serial signal at AUANA block side performes transmitting and receiving the audio data between Echo Canceller DSP1 (IC570) and AD/DA-Converter (IC600). The clock and frame sync signal of the serial signal are supplied from Serial Timing Generator (IC501). It operates on +3.3 V-2 power supply voltage.

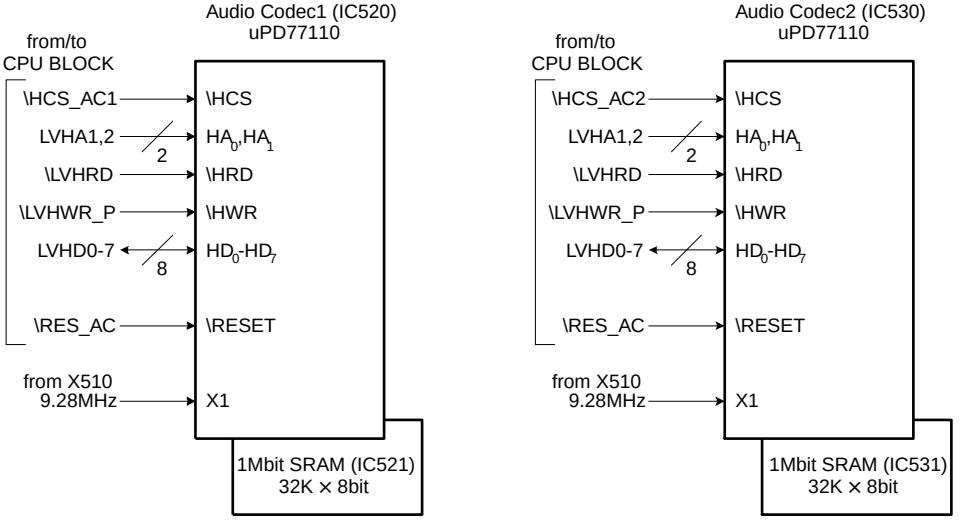


Fig. 3-16 Host Interface of AC Block

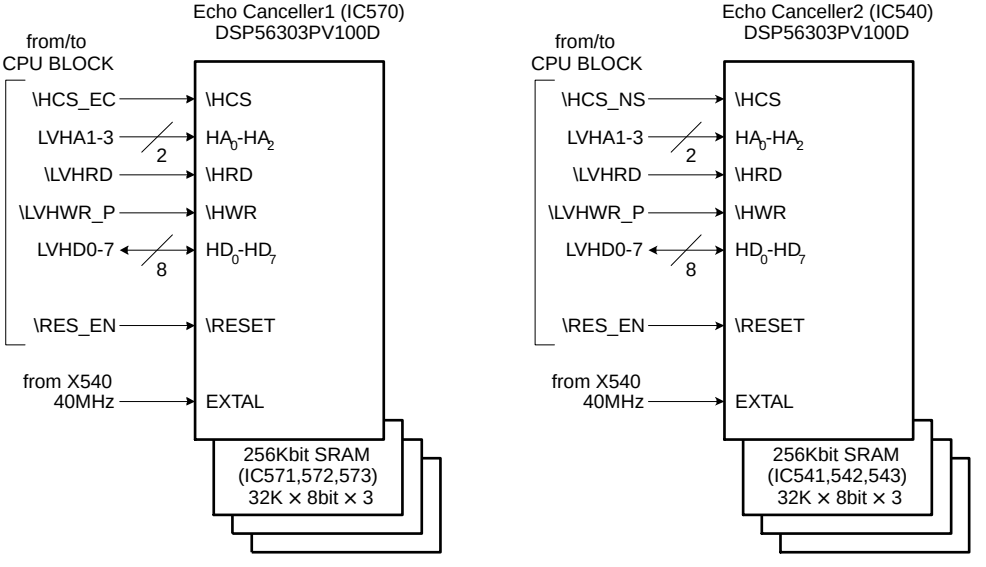


Fig. 3-17 Host Interface of EC Block

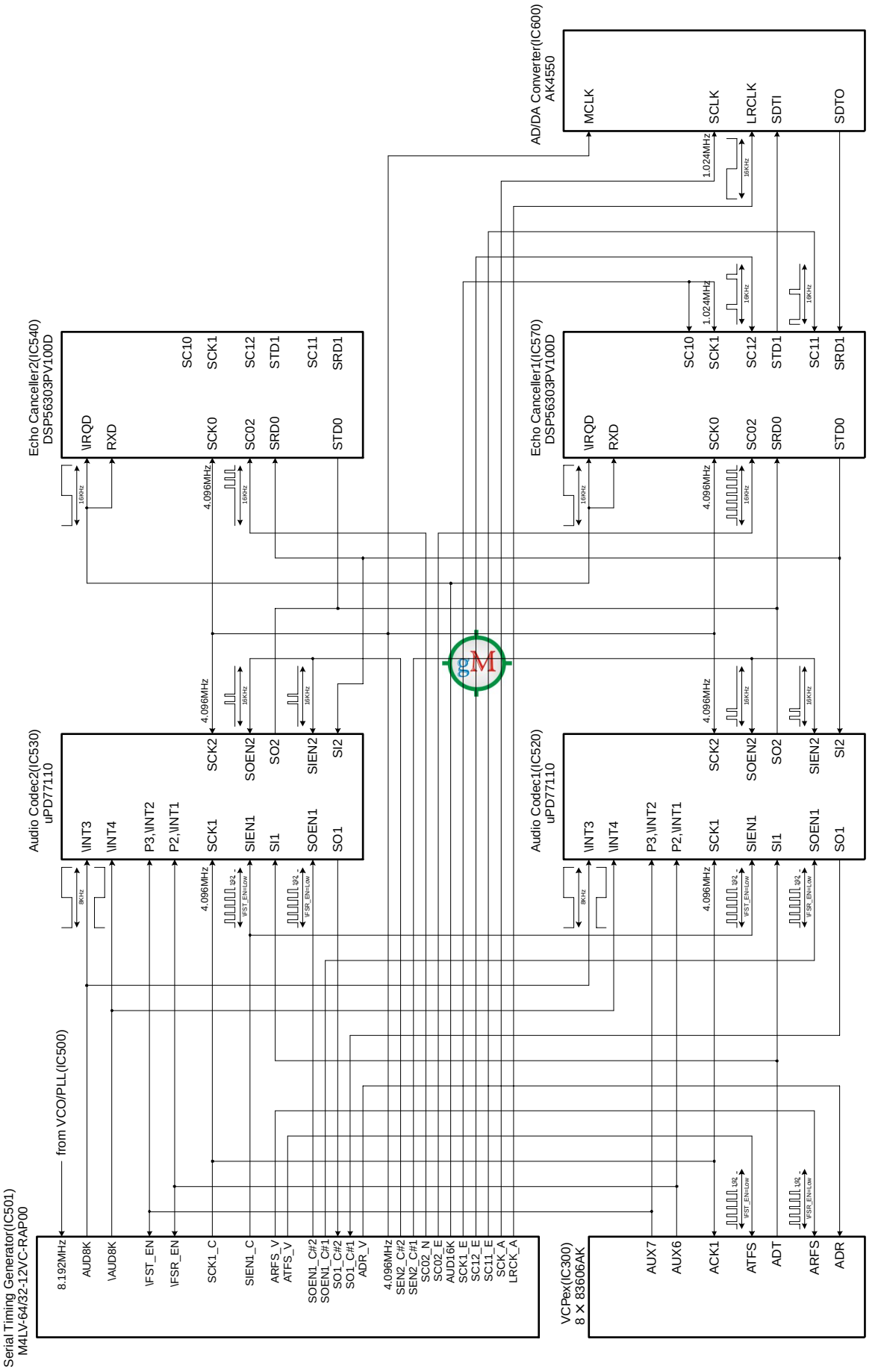


Fig. 3-18 Serial data connection of AC & EC Block

[AUANA block]

The AUANA block consists of the AD/DA-Converter (IC600), operational amplifiers (IC601 to IC603), Audio Selector (IC604), Audio Amplifier (IC605) and muting circuit. (Refer to Fig.3-19.)

The audio signal that is supplied from the built-in microphone (CN601), MIC1 and MIC2 connectors is amplified by the operational amplifier (IC601), and send to the Audio Selector (IC604) (MIC1 and MIC2 signals are mixed together). The Audio Selector (IC604) selects the audio signal in accordance with the port output from the VIDDA block (IC352). The selected audio signal is converted to differential signal which is controlled to suitable level for the A/D-Converter (IC600), by level control circuit consisting of the operational amplifier (IC602), then send to L channel of the A/D-Converter (IC600). The audio signal supplied from the AUDIO-IN connector is converted to differential signal which is controlled to suitable level for A/D-Converter, by level control circuit consisting of the operational amplifier (IC602), then send to R channel of A/D-Converter (IC600).

About 5.4 V DC supply voltage supplies to the built-in microphone (CN601). About 3 V DC supply voltage supplies to MIC1 and MIC2 connectors as it is plug-in powered on the audio signal.

Audio output signal appears from L channel of the D/A-Converter (IC600), amplified by the amplifier circuit consisting of the operational amplifier (IC603) and then feeds to AUDIO-OUT connector. AUDIO-OUT signal can be muted by MUTE circuit that is controlled by the port output “OUT_MUTE” of NETIF block (IF750). Audio output signals for built-in speaker and recording appears from R channel of the D/A-Converter (IC600). Built-in speaker output is amplified by the Audio Amplifier (IC605), then drives the speaker (CN602). Speaker output can be muted by MUTE circuit that is controlled by the port output “SP_MUTE” of the NETIF block (IF750). The other side, recording output signal appears to the RECOUT (CN603) and it can be muted by MUTE circuit that is controlled by the port output “REC_MUTE” of the NETIF block (IF750). These are used to changing exclusive.

The operating clock signal (4.096 MHz) of the AD/DA-Converter (IC600) is supplied from the Serial Timing Generator (IC501). Also, AD/DA-Converter (IC600) can be reset by the “PWD_AK” signal that is supplied from the CPU block.

Power supply voltage at +3.3 V-2 DC supplies to the AD/DA-Converter (IC600) circuit. Other circuits of the AUANA block is supplied at +10 V DC power supply voltage.

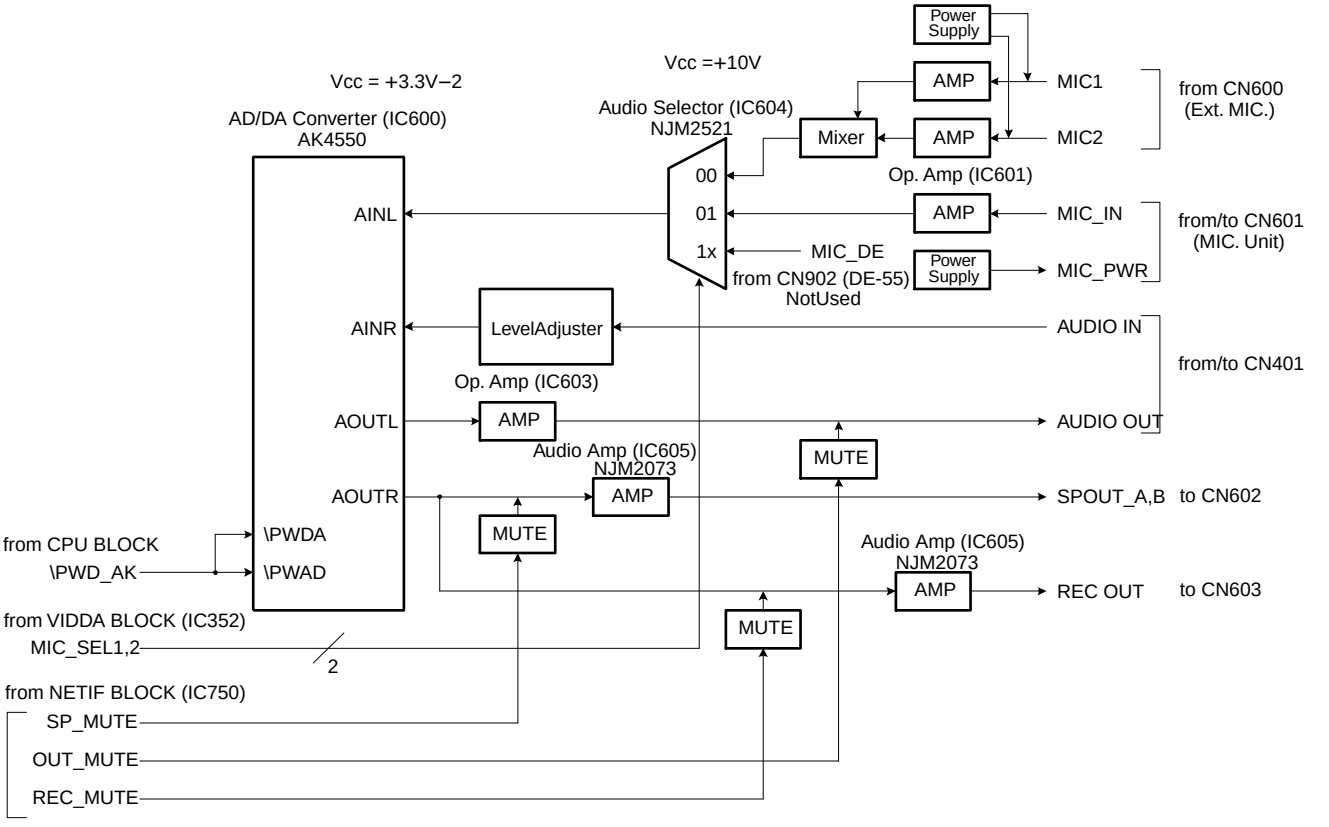


Fig. 3-19 Host Interface of AC Block

3-2-2. Overall Function of IPM-92A and IPM-93A Boards (Infrared IR Receiver Board)

The block diagram of the IPM-92A, IPM-93A and DE-55 boards is shown in Fig. 3-20.

The infrared signal is converted to an electrical signal by D701 and D801 (photodiode: PP701). The electrical signal is amplified by [PRE AMP] and sent to the DE-55 board. D701 and D801 are reverse-biased by the ANALOG_27 V (27 ±3 V) that is generated by the DE-55 board.

3-2-3. Overall Function of DE-55 Board (FM Demodulator Board)

IC301 generates a rectangular wave of about 9 kHz to which a DC component is superimposed by D301, D302, C304 to C306 in order to generate and apply the reverse-bias (ANALOG_27 V (27 ±3 V)) across the photodiode on the IPM-92A and IPM-93A boards. [STEP-UP]

The electrical signal (TP401, TP421) that is converted by the IPM-92A and IPM-93A boards is separated of its carrier bandwidth signal only [BPF], and amplified by about 10 dB [RF_AMP].

These signals (TP401, TP421) are added together. However, the waveform after the signal component below 4.1 V is sliced and removed when the input infrared light intensity is high (TP101).
The added signal is amplified by IC101 (MC10H105MEL) and its amplitude limited [LIMITER] in order to generate the rectangular wave of 0.8 Vp-p (TP102).

In the demodulator IC121 (MC10M107MEL), the signal whose phase is delayed by the two-stage delay elements consisting of resistor and capacitor, and the direct signal that is input after a simple buffer are logic-EXNORed. [DEMODULATOR]

The output signal (TP121) of the EXNOR gate is the demodulated signal that still includes the high frequency component. Only the video signal bandwidth is separated and the video signal is obtained. [LPF (integrator)]

Because the demodulated output signal (TP141) is emphasized by the infrared transmitter, the high frequency component is removed at the first stage of IC141 (TK15403MTL) to restore the original video waveform (TP142). [DE_EMPHASIS]

The restored video signal is amplified by the second and the third stage of IC141 (TK15403MTL) by about 14 dB so that output of 1 Vp-p (TP143) is obtained across the 75 Ω termination. [VIDEO AMP]

The video output signal from the first stage is amplified up to 2 Vp-p from which the simple signal detection is performed by the circuit block that has the parts reference number of the 160 series. Detection whether video signal is present or not, is performed by this circuit. When the presence of video signal is not detected, the signal output is muted. [MUTE CONTROL]

3-2-4. Overall Function of RX-47A Board

The SIRCS signal that is transmitted from the remote commander is converted from the infrared signal to the electrical signal and is sent to the MA-107/107P board via the buffer.

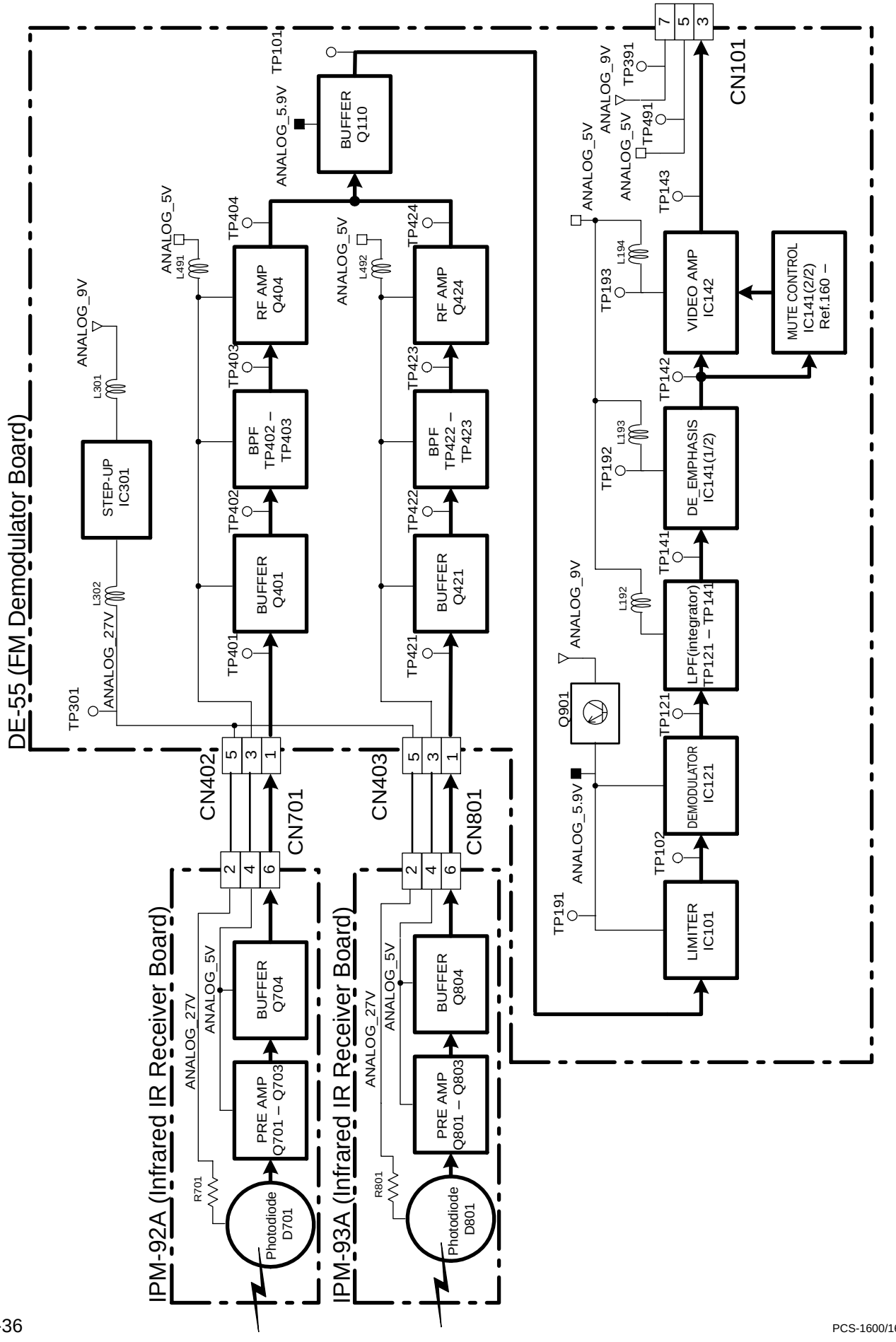


Fig. 3-20 Infrared signal demodulation Block

http://getMANUAL.com

3-2-5. Overall Function of IF-823 Board

[System outline]

The IF-823 board is an ISDN communication interface board of the compact processor (PCS-P160/P160P), and is installed in the optional interface MA-107/107P board. The IF-823 board has two BRI ports that realize the 3 BRIs (6B) connection with the port on the MA-107/107P board. Call control over the line is performed by the I-Interface LSI HD81504 (IC100, IC200) and the two externally connected RAMs. The call control firmware is downloaded from the host to one of the two RAMs. The other RAM is used as the work area of the I-Interface LSI HD81504. Data (the B-channel data) flows as follows: When a call connection is established, the received signal is sent to the option interface MA-107/107P from the I-Interface LSI HD81504, then is sent to TDM ASIC on the MA-107/107P board. The transmission signal flows in the reverse signal path as described above. The IF-823 board consists of the analog line block, the CPU block, the receive call detection and memory check block and the bus control block. Functions of the respective circuit blocks are described as follows:

1. Analog line block

The signal of the primary side that is received from the line and the signal of the secondary side that is transmitted from the I-Interface LSI HD81504 (IC100, IC200) are level-shifted by the respective transformers (T100, T200) and are sent to the secondary side and the primary side respectively. The EMI filters (FL100, FL200) remove the noise included that is output to the line.

2. CPU block

The CPU block consists of the I-Interface LSI HD81504 (IC100, IC200) and the two SRAMs. The ISDN call control firmware is stored in one of the two SRAMs (IC101, IC201) and the other SRAM (IC102, IC202) is used as the RAM area of the I-Interface LSI HD81504. The firmware is downloaded from the MA-107/107P board flash memory to the RAM that the I-Interface LSI HD81504 (IC100, IC200) uses as a ROM area.

3. Receive call detection and memory check blocks

When data arrives, receive call detection is performed. The receive call interrupt signal is sent to the TDM ASIC of the MA-107/107P board where the receive call detection signal is set in the register (IC312). After the firmware is downloaded, the memory check is performed on the RAM area. The result OK or NG of the memory check is set in a register. The receive call and the result of memory check can be confirmed when the host CPU reads the data that is set in the register.

4. Bus control block

The PLD (IC312) has the functions of address decoding, host bus control, the address settings for downloading and register. The host bus control function involves separating the local bus that connects the I-Interface LSI HD81504 (IC100, IC200) with the SRAM when downloading the firmware to the SRAM, or directly connecting the host bus to the SRAM or returning the connection to the original one. The downloading address setting function sets the address (A0 to A14) of the SRAM by performing the address setting twice. The first address setting sets the higher addresses of A14 to A8 and the second address setting sets the lower addresses of A7 to A0. The bus control block has downloading setting register and receive call detection/memory check registers.

The block diagram of the IF-823 board is shown in Fig. 3-21.

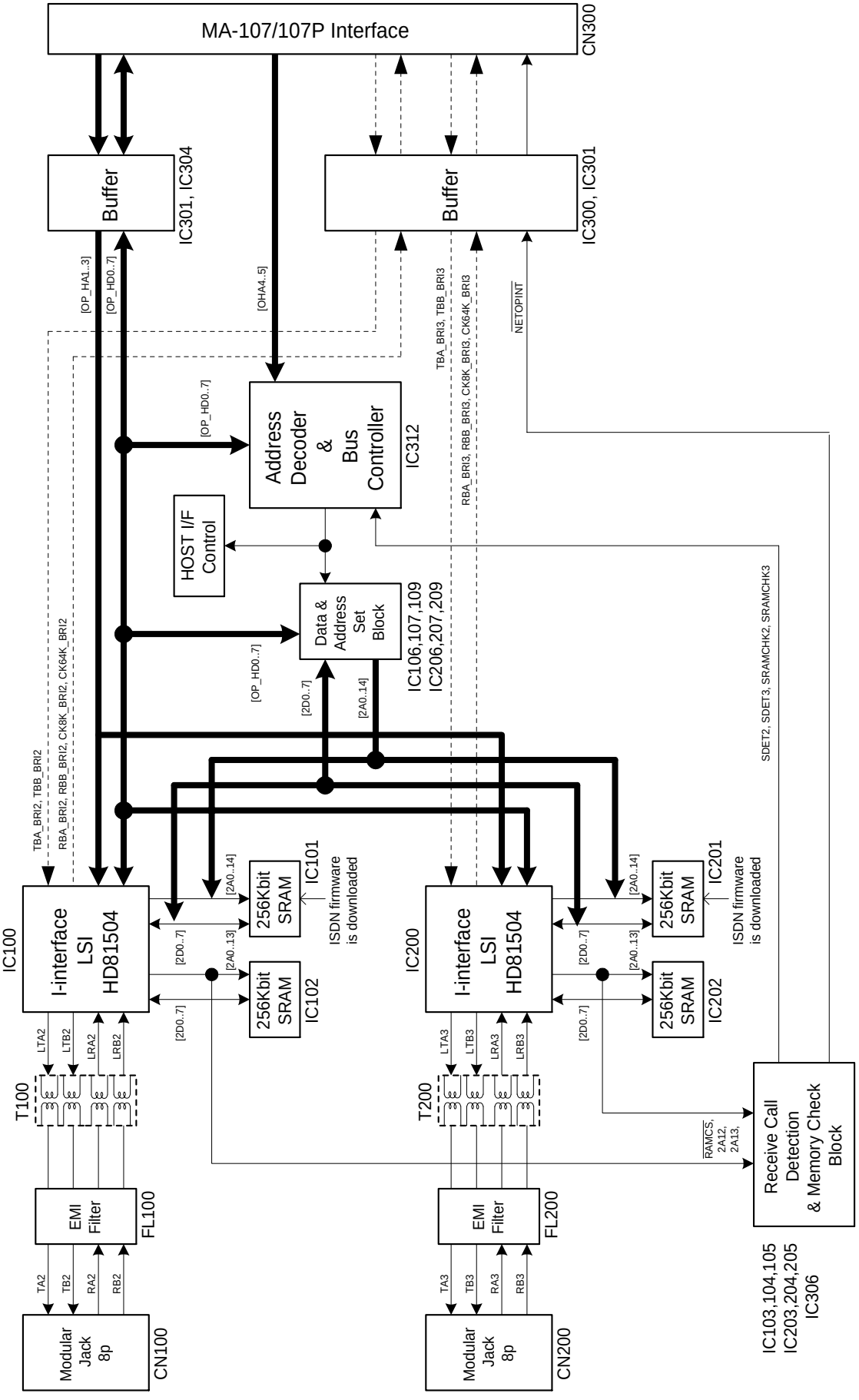


Fig. 3-21 IF-823 Board Block Diagram

3-2-6. Overall Function of IF-824 Board

[System outline]

The IF-824 board is the communication interface board that establishes the communication interface between the compact processor (PCS-P160/P160P) and terminal adapter (TA) that has the V.35 interface. The IF-824 board is installed as an optional interface of the MA-107/107P board. The number of connection ports of the IF-824 board is one. When establishing connection with the IF-824 board without using call control, only the V.35 interface is used. If you want automatic dialing and reception using call control, connect the IF-824 board using the V.35 interface and the RS-366 interface. The IF-824 board consists of the transceiver block, receive call detection block, host interface block and voltage converter block.
The functions of the respective circuit blocks are described below.

1. Transceiver block

The characteristics of both the transmitting and receiving signal, are converted between the balanced transmission signal (conforming to the V.35 electrical characteristics) and the digital TTL level by the V.35 transceiver (IC101). The signal transmission is performed in the form of a balanced signal in which the signal amplitude must swing both in the positive and negative directions. It requires ±5 V power supply voltage for the V.35 transceiver (IC101). On the other hand, all of the call control signals are unbalanced transmission signals (conforming to the V.28 electrical characteristics) that can be directly interfaced with the EIA-232C electrical characteristics. Therefore, conversion between the V.28 electrical characteristics and the TTL level is performed using the EIA-232C transceivers (IC200, IC201, IC202, and IC203).

2. Receive call detection and memory check blocks

When either RI that is the V.35 interface control signal or DLO that is the RS-366 interface control signal goes active, these circuit blocks (IC204, IC205 and IC206) activates the receive call interrupt signal to notify the TDM ASIC of the MA-107/107P board and also the host interface of the reception of data.

3. Host interface block

The PLD (IC105) has the control function over the host interface, and an address decoder function and four I/O ports.

4. Voltage converter block

Because the power supply voltage that is introduced to this board is only the single +5 V DC, −5 V power is generated using the charge-pump type voltage converter (IC100).

The block diagram of the IF-824 board is shown in Fig. 3-22.

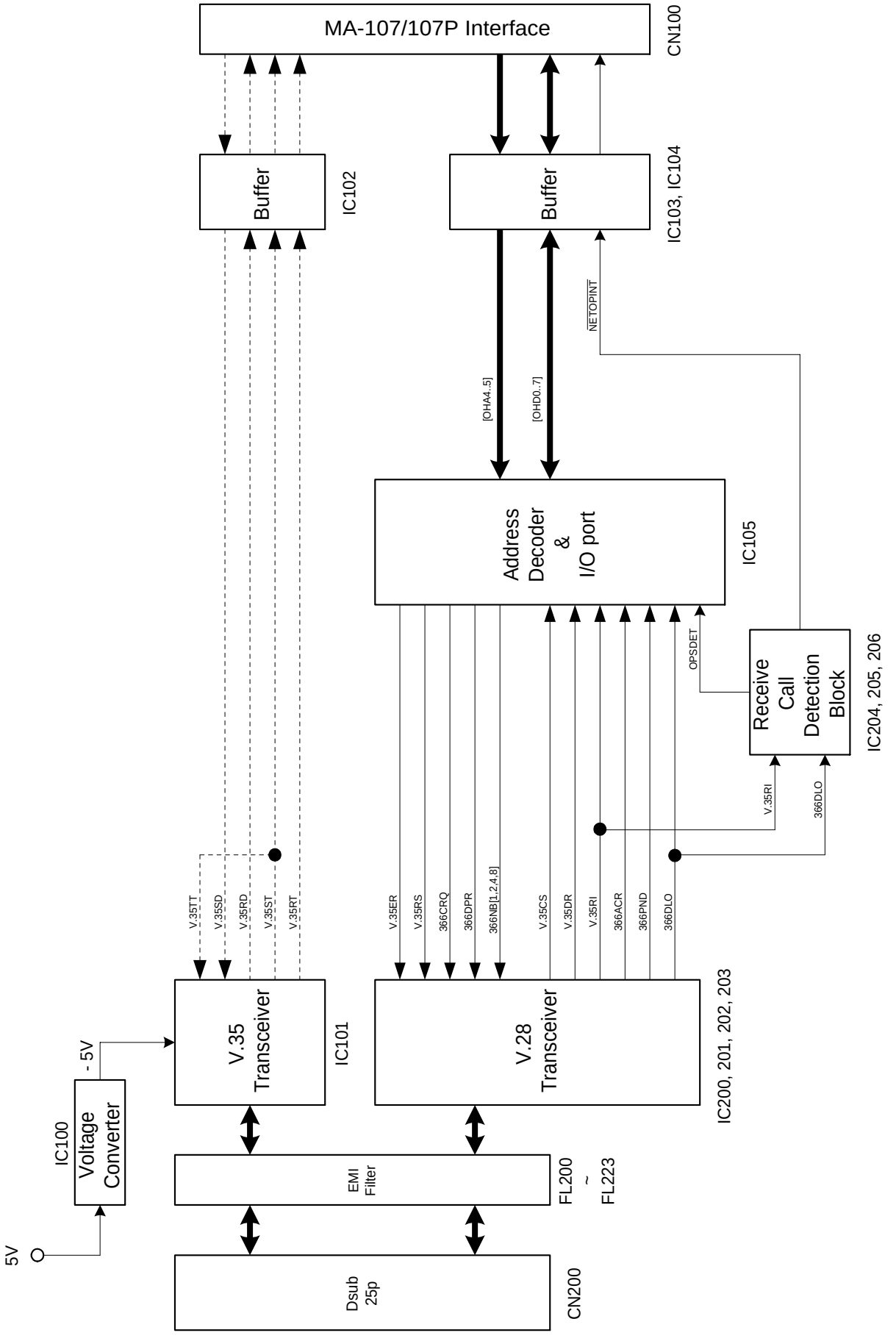
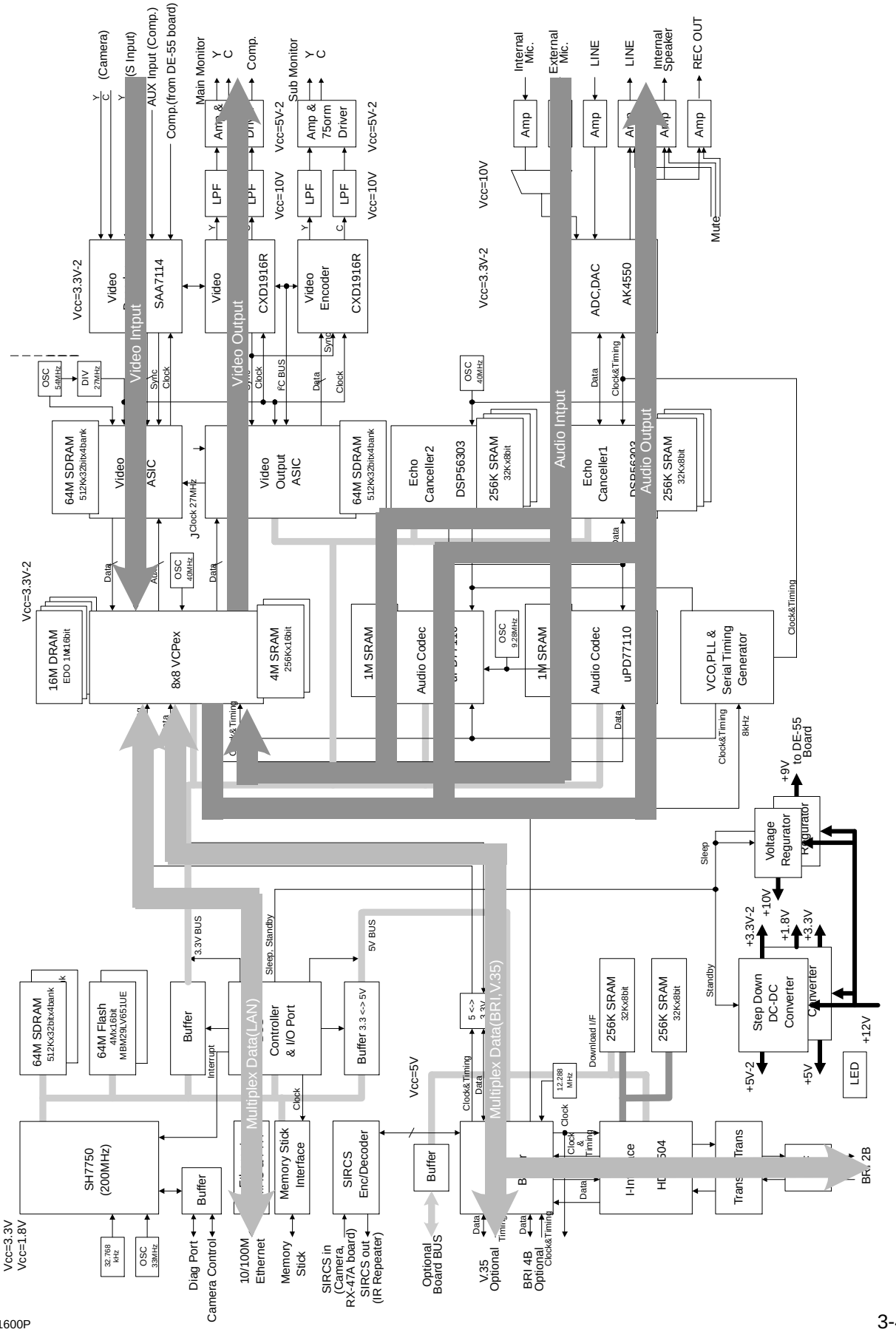


Fig. 3-22 IF-824 Board Block Diagram

3-3. Signal Flow of Communication Data



Section 4
Troubleshooting

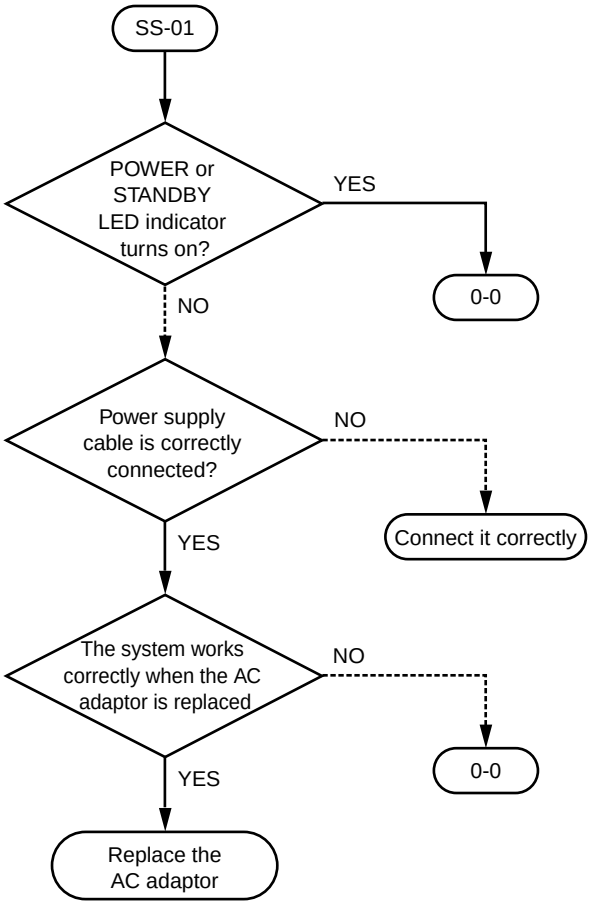
4-1. Check Items Before Starting Self-diagnostics

1. Be sure to check the following items before starting the self-diagnostics.

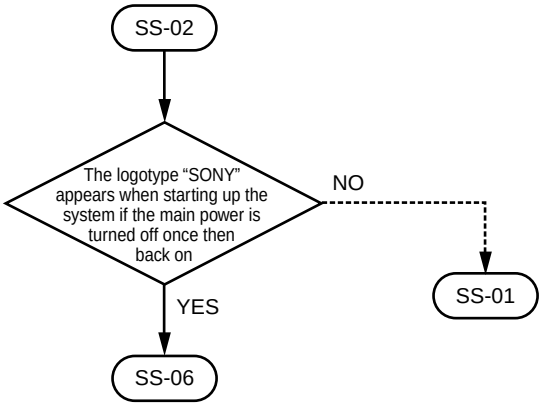
Major trouble symptoms when errors occur

Symptom	Flow chart
1. The main power cannot be turned on even the POWER switch of processor is pressed. (The logotype “SONY” does not appear.)	SS-01
2. The main power cannot be turned on even the “POWER” button of remote commander is pressed.	SS-02
3. The main power cannot be turned on at the event of automatic receive call.	SS-03
4. The main power of monitor or TV is not turned on when the main power is turned on.	SS-04
5. When the main power is turned on, the logotype “SONY” appears but the picture from camera does not appears.	SS-05
6. The PCS-1600/1600P system cannot be controled by remote commander.	SS-06
7. Camera control cannot be operated.	SS-07
8. Cannot connect to line (ISDN).	SS-08
9. Cannot connect to the circuit (LAN).	SS-09
10. Cannot connect to the circuit (V.35).	SS-10
11. After line is connected, picture from a remote side cannot be displayed normally, or picture cannot be sent to a remote side.	SS-11
12. Video input (AUX-1, AUX-2, AV-link) picture is not displayed. However, the camera picture is normally displayed.	SS-12
13. After line is connected, any voice cannot be heard from a remote side.	SS-13
14. After line is connected, any voice cannot be sent to a remote side.	SS-14
15. External microphone cannot be used.	SS-15

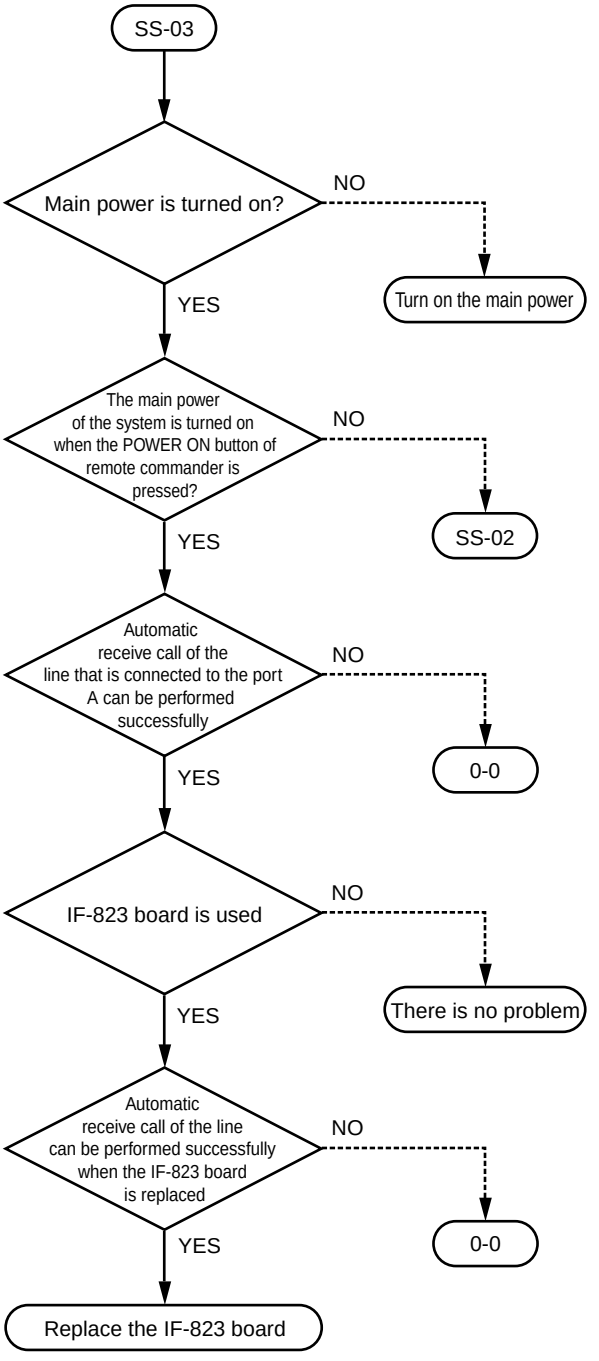
Symptom: The main power cannot be turned on even the POWER switch of processor is pressed. (The logotype “SONY” does not appear.)



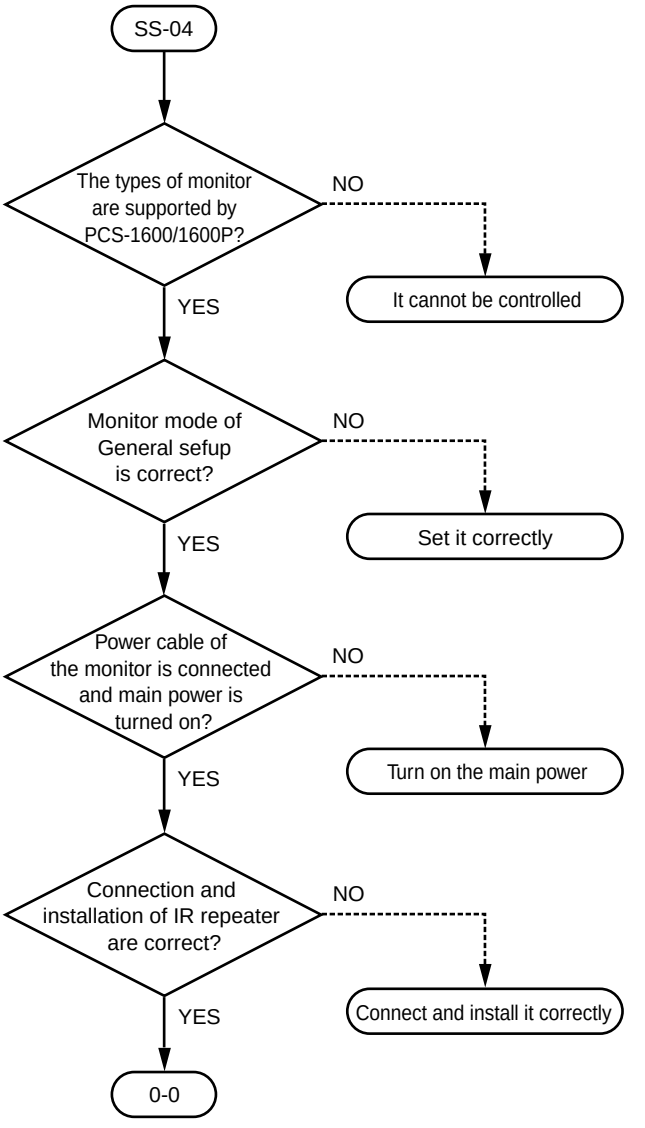
Symptom: The main power cannot be turned on even the “POWER” button of remote commander is pressed.


SS-02
The logotype “SONY” appears when starting up the system if the main power is turned off once then back on
NO
SS-01
YES
SS-06

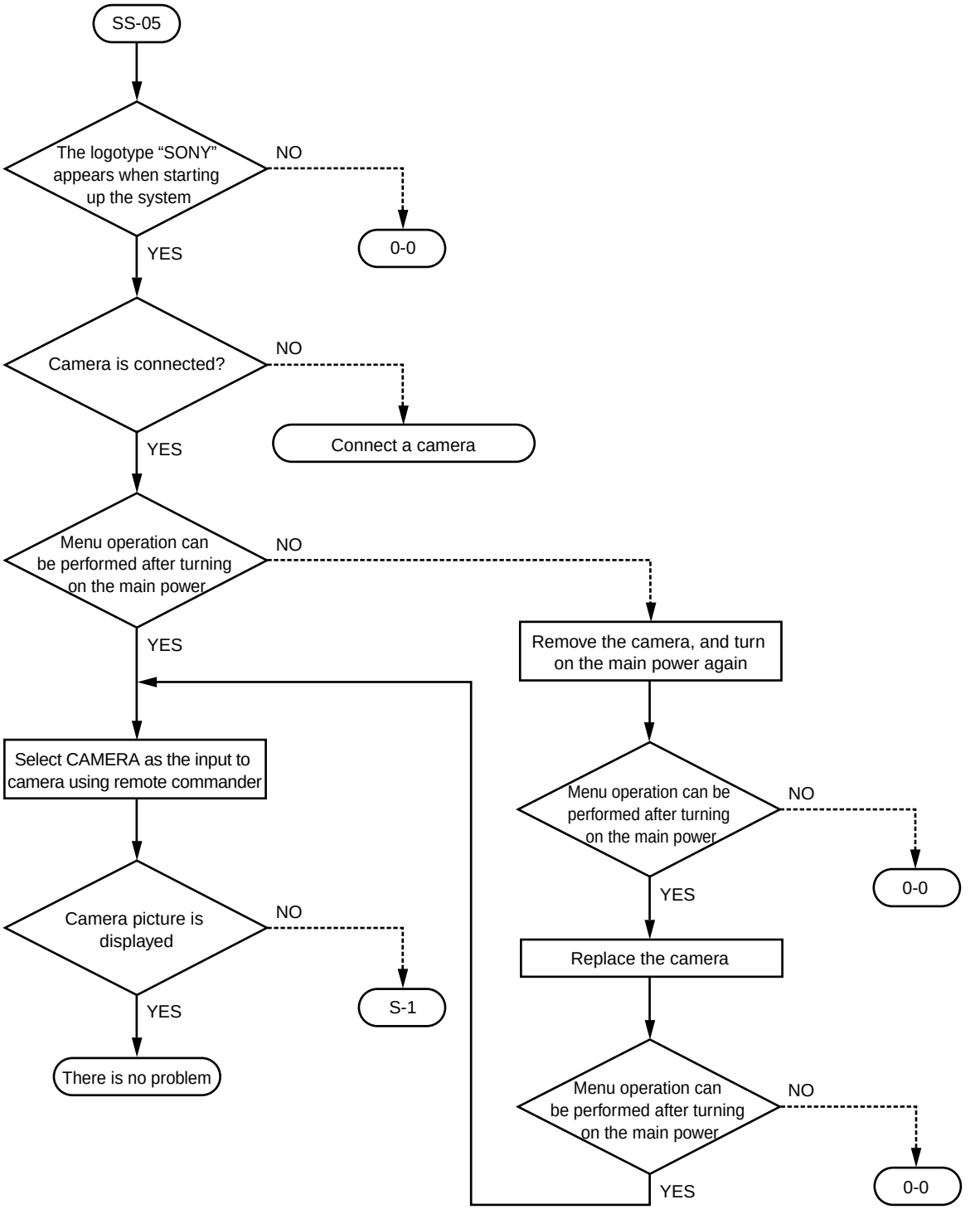
Symptom: The main power cannot be turned on at the event of automatic receive call.


SS-03
Main power is turned on?
NO
Turn on the main power
YES
The main power of the system is turned on when the POWER ON button of remote commander is pressed?
NO
SS-02
YES
Automatic receive call of the line that is connected to the port A can be performed successfully
NO
0-0
YES
IF-823 board is used
NO
There is no problem
YES
Automatic receive call of the line can be performed successfully when the IF-823 board is replaced
NO
0-0
YES
Replace the IF-823 board

Symptom: The main power of monitor or TV is not turned on when the main power is turned on.

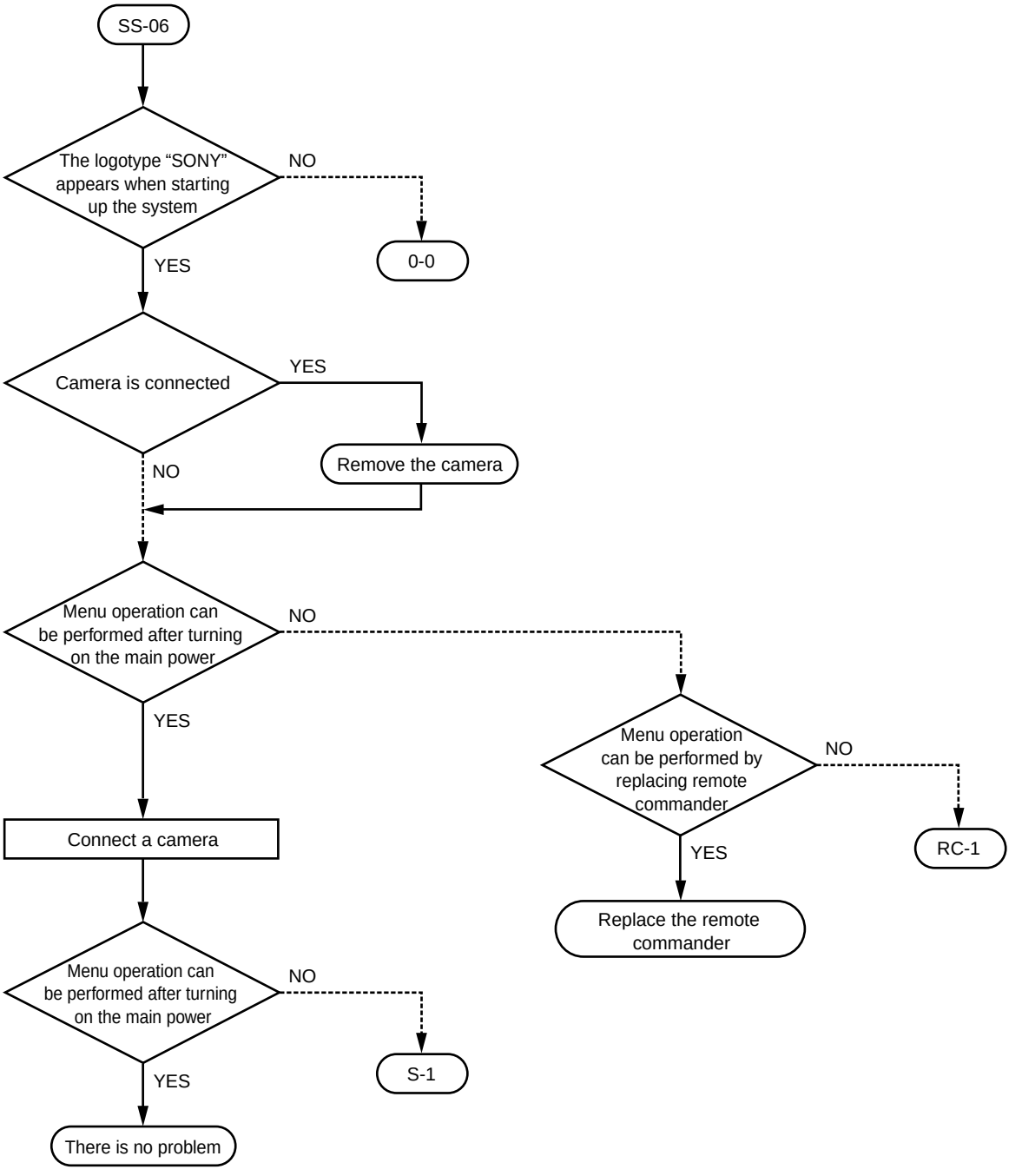


Symptom: When the main power is turned on, the logotype “SONY” appears but the picture from camera does not appears.

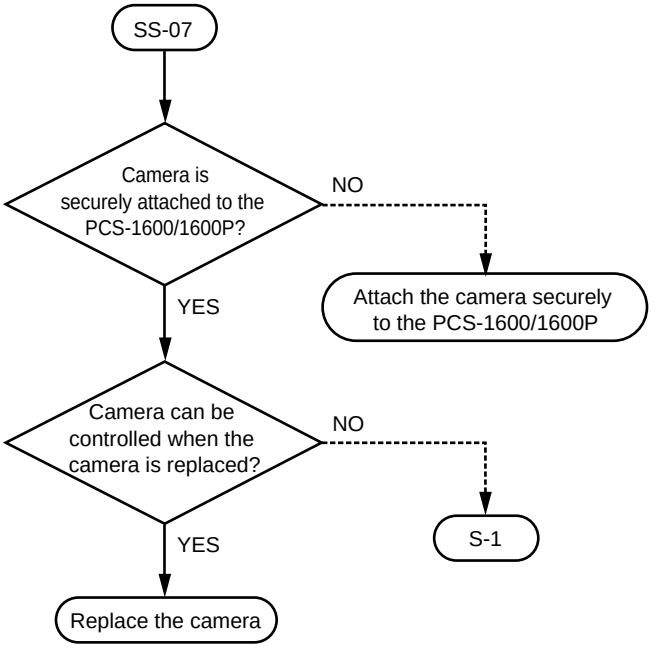


http://getMANUAL.com

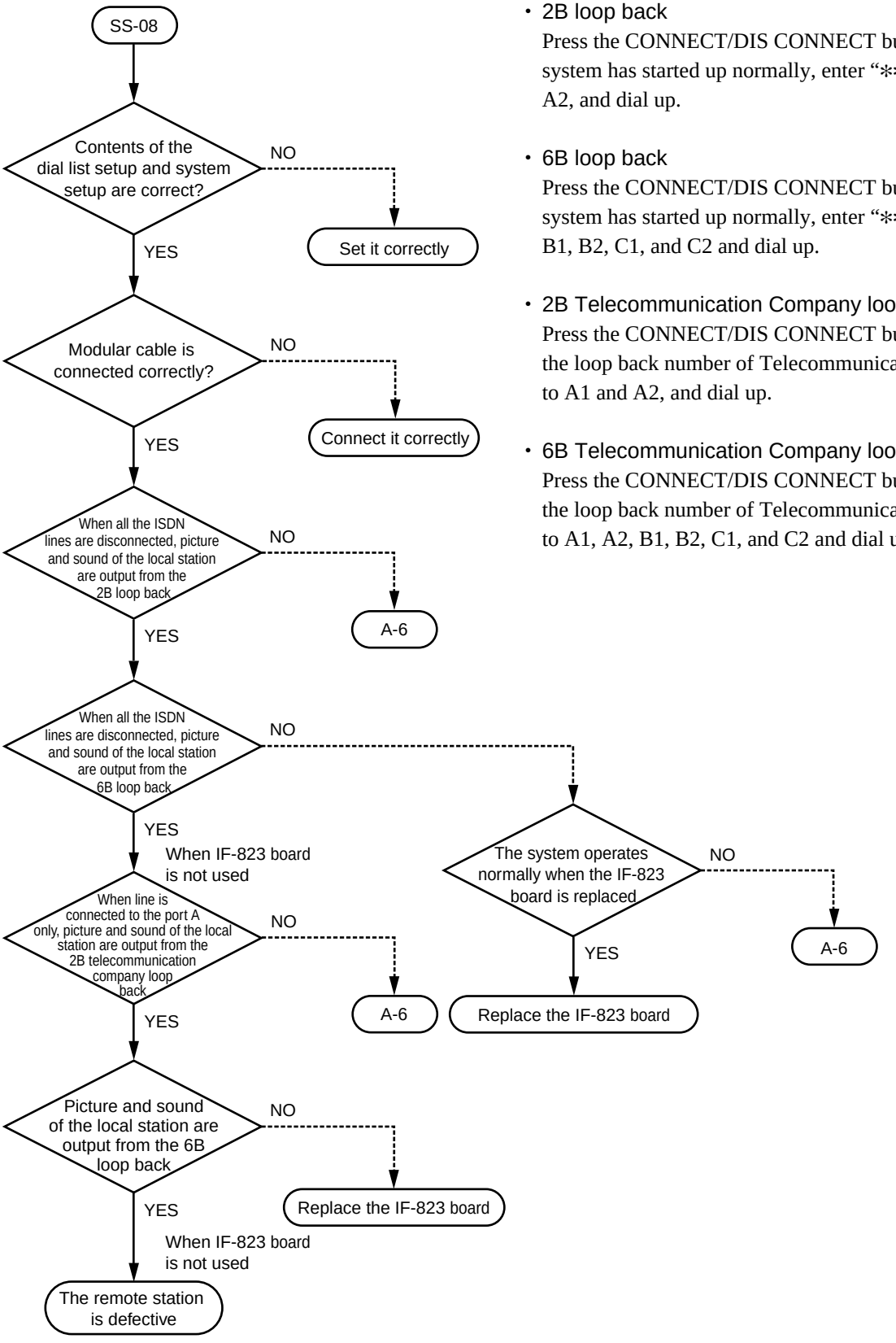
Symptom: The PCS-1600/1600P system cannot be controled by remote commander.



Symptom: Camera control cannot be operated.

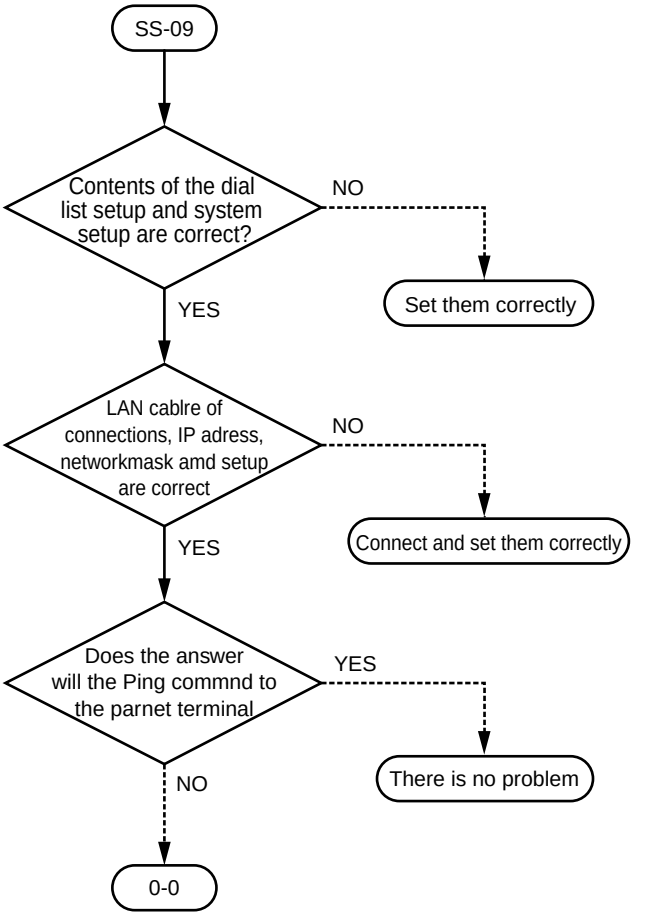


Symptom: Cannot connect to line (ISDN).


SS-08
Contents of the dial list setup and system setup are correct?
NO
Set it correctly
YES
Modular cable is connected correctly?
NO
Connect it correctly
YES
When all the ISDN lines are disconnected, picture and sound of the local station are output from the 2B loop back
NO
A-6
YES
When all the ISDN lines are disconnected, picture and sound of the local station are output from the 6B loop back
NO
YES
When IF-823 board is not used
The system operates normally when the IF-823 board is replaced
NO
A-6
YES
Replace the IF-823 board
When line is connected to the port A only, picture and sound of the local station are output from the 2B telecommunication company loop back
NO
A-6
YES
Picture and sound of the local station are output from the 6B loop back
NO
Replace the IF-823 board
YES
When IF-823 board is not used
The remote station is defective

- 2B loop back
  Press the CONNECT/DIS CONNECT button after the system has started up normally, enter "**" to A1 and A2, and dial up.
- 6B loop back
  Press the CONNECT/DIS CONNECT button after the system has started up normally, enter "**" to A1, A2, B1, B2, C1, and C2 and dial up.
- 2B Telecommunication Company loop back
  Press the CONNECT/DIS CONNECT button, and enter the loop back number of Telecommunication Company to A1 and A2, and dial up.
- 6B Telecommunication Company loop back
  Press the CONNECT/DIS CONNECT button, and enter the loop back number of Telecommunication Company to A1, A2, B1, B2, C1, and C2 and dial up.

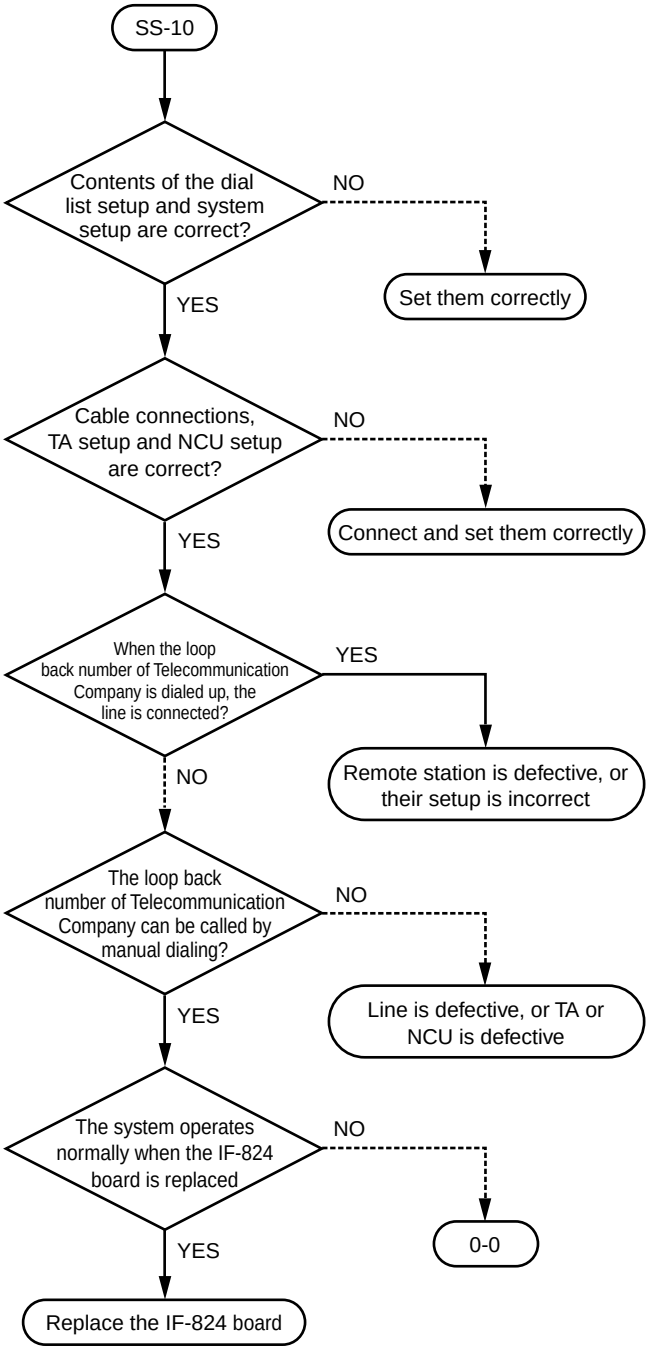
Symptom: Cannot connect to the circuit (LAN).



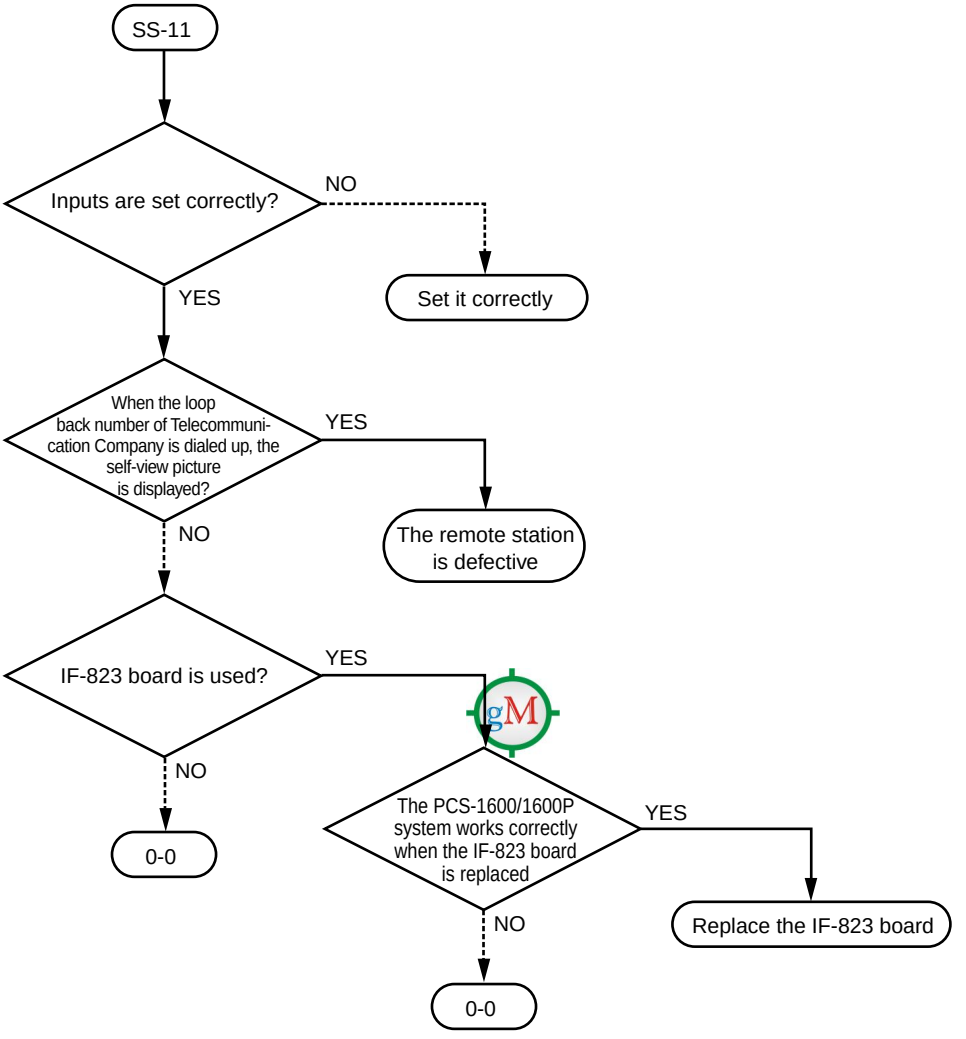
[Ping command oscillation from PCS-1600/1600P]

> pass□tcpdb↓
> ping□123.45.67.89↓ (IP adress of remote terminal)

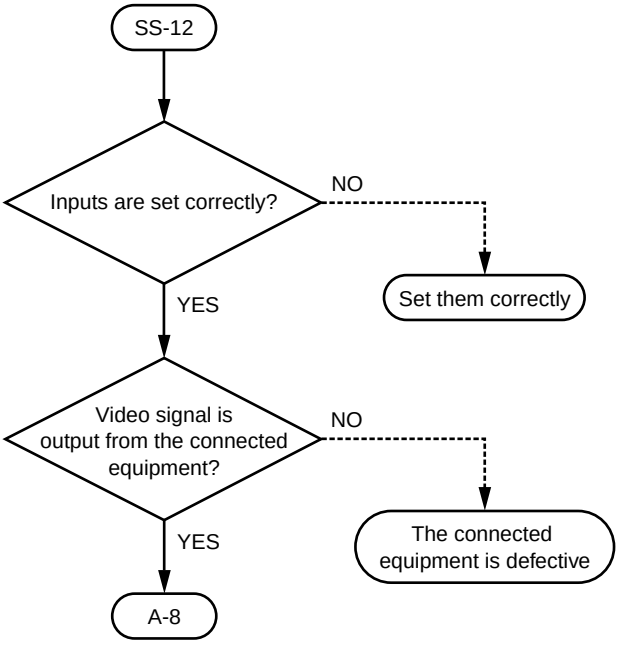
Symptom: Cannot connect to the circuit (V.35).


SS-10
Contents of the dial list setup and system setup are correct?
NO
Set them correctly
YES
Cable connections, TA setup and NCU setup are correct?
NO
Connect and set them correctly
YES
When the loop back number of Telecommunication Company is dialed up, the line is connected?
YES
Remote station is defective, or their setup is incorrect
NO
The loop back number of Telecommunication Company can be called by manual dialing?
NO
Line is defective, or TA or NCU is defective
YES
The system operates normally when the IF-824 board is replaced
NO
0-0
YES
Replace the IF-824 board

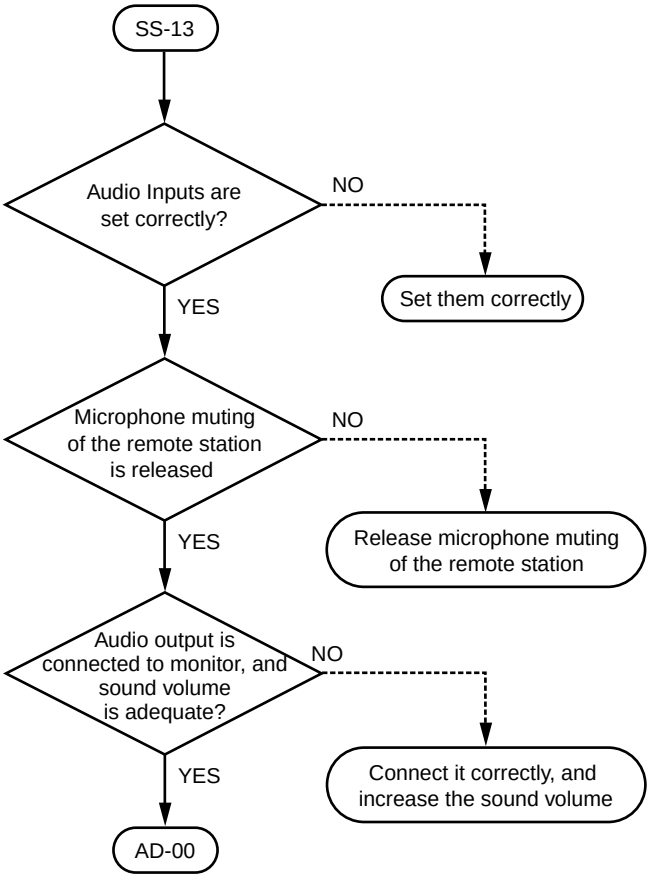
Symptom: After line is connected, picture from a remote side cannot be displayed normally, or picture cannot be sent to a remote side.



Symptom: Video input (AUX-1, AUX-2, AV-link) picture is not displayed.
However, the camera picture is normally displayed.

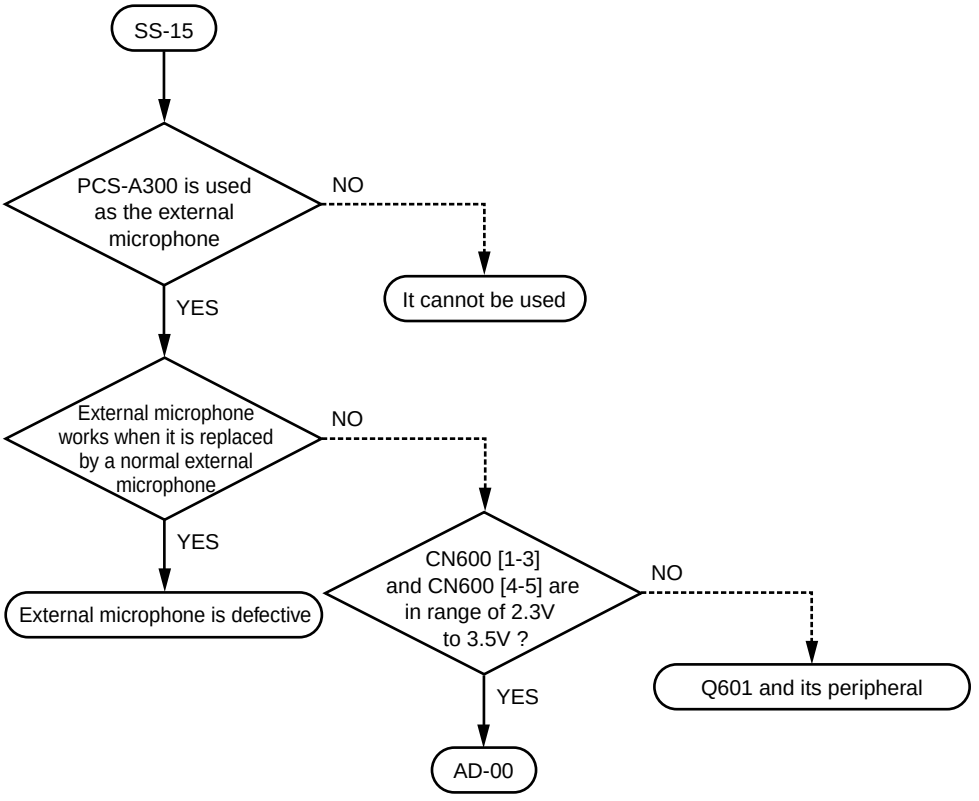


Symptom: After line is connected, any voice cannot be heard from a remote side.

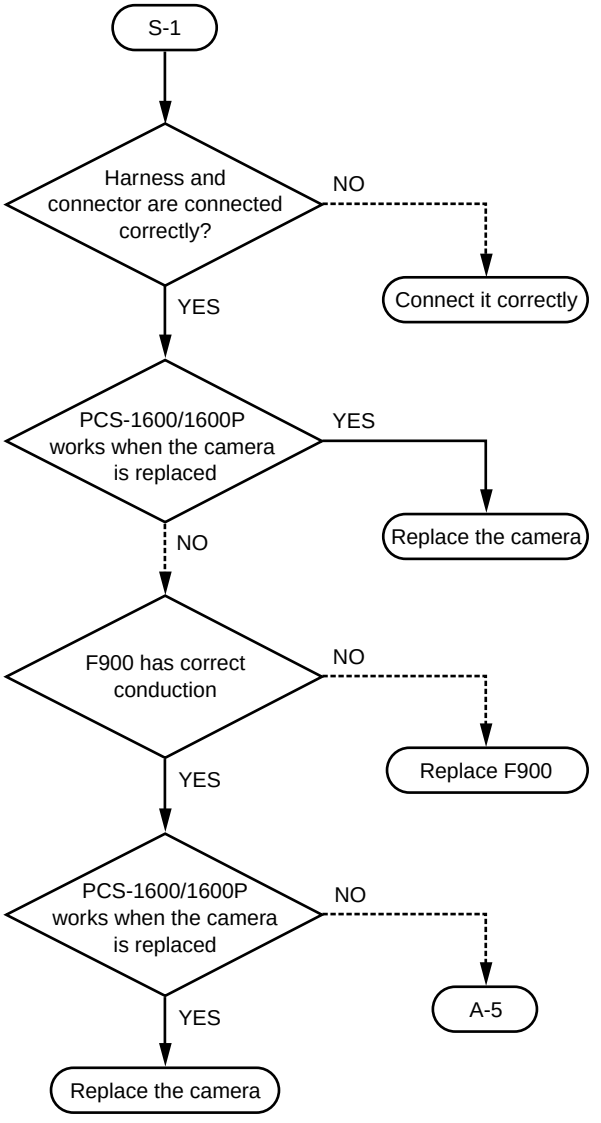


Symptom: After line is connected, any voice cannot be sent to a remote side.

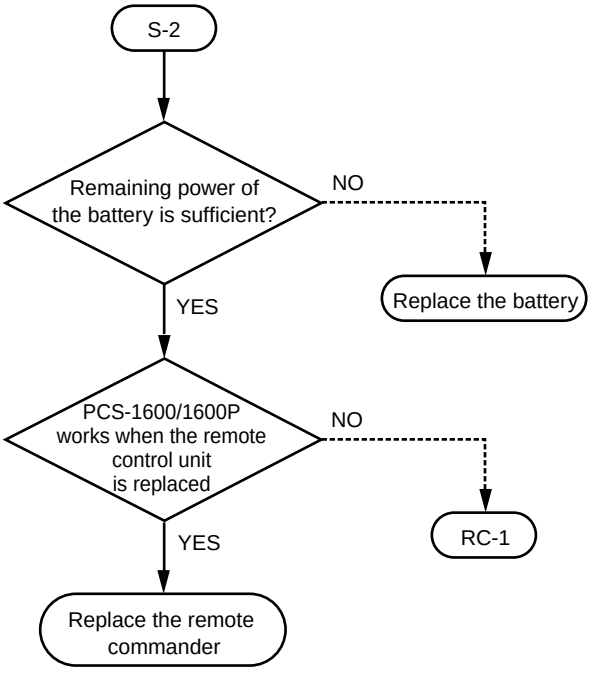
Symptom: External microphone cannot be used.



Locating the trouble whether it is in the camera or in the PCS-1600/1600P system

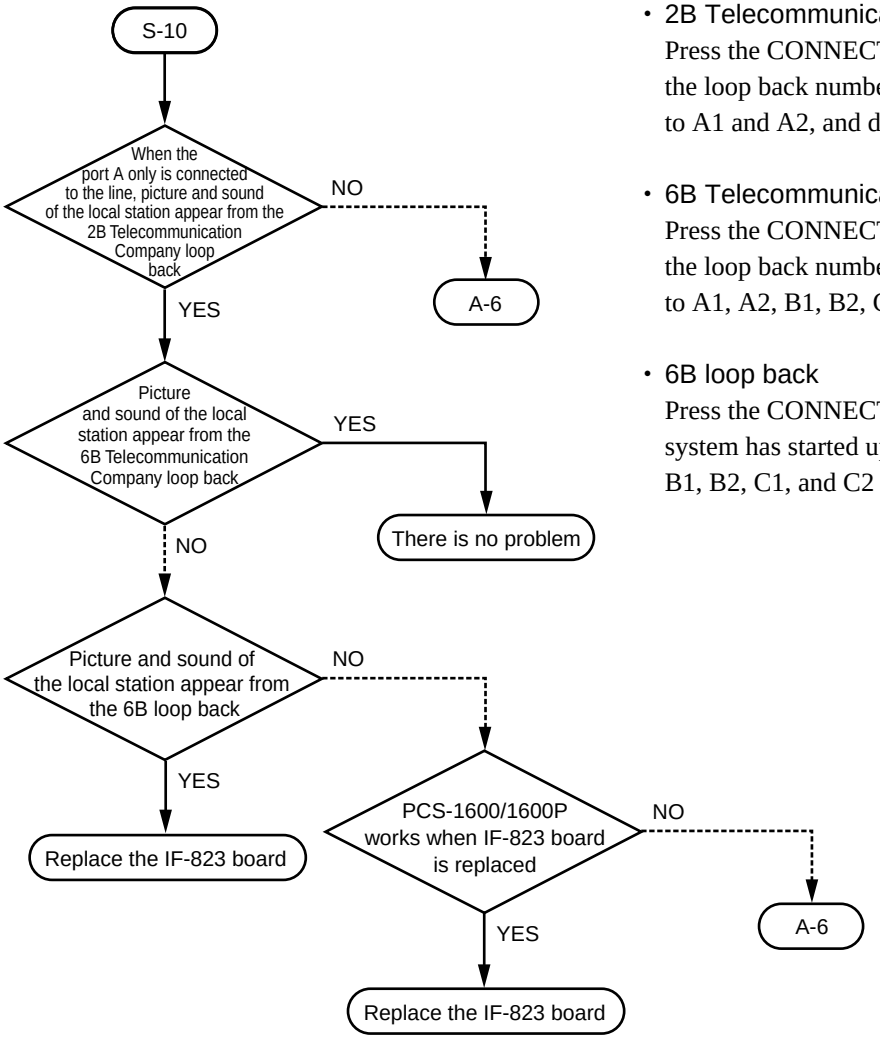


Locating the trouble whether it is in the remote commander or in the PCS-1600/1600P system



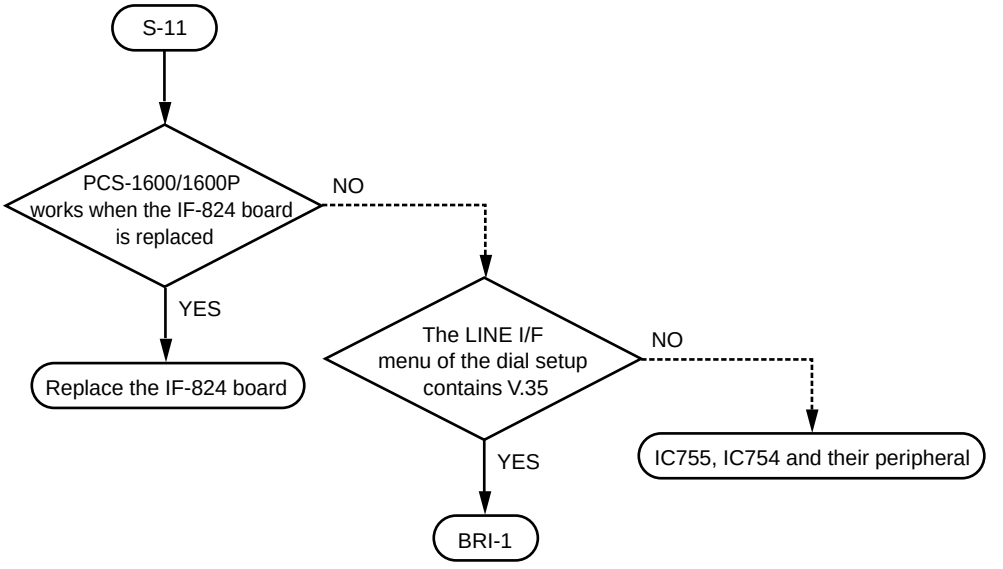
http://getMANUAL.com

Locating the trouble whether it is in IF-823 board or in the PCS-1600/1600P system


S-10
When the port A only is connected to the line, picture and sound of the local station appear from the 2B Telecommunication Company loop back
NO
A-6
YES
Picture and sound of the local station appear from the 6B Telecommunication Company loop back
YES
There is no problem
NO
Picture and sound of the local station appear from the 6B loop back
NO
YES
Replace the IF-823 board
PCS-1600/1600P works when IF-823 board is replaced
NO
A-6
YES
Replace the IF-823 board

- 2B Telecommunication Company loop back
  Press the CONNECT/DIS CONNECT button, and enter the loop back number of Telecommunication Company to A1 and A2, and dial up.
- 6B Telecommunication Company loop back
  Press the CONNECT/DIS CONNECT button, and enter the loop back number of Telecommunication Company to A1, A2, B1, B2, C1, and C2 and dial up.
- 6B loop back
  Press the CONNECT/DIS CONNECT button after the system has started up normally, enter “**” to A1, A2, B1, B2, C1, and C2 and dial up.

Locating the trouble whether it is in IF-824 board or in the PCS-1600/1600P system



2. When the IPM-92A board or IPM-93A board is suspected to be defective

- However, set the input signal level as shown below before starting to check the circuit boards in order to reduce the external disturbance due to natural light or other adverse effects due to noise, etc. (Select an oscilloscope setup of 20 MHz with band-width limit: [ON.])
- Use the IPM-92A board and IPM-93A board that are known to be good and set the signal level as follows. TP401: 2.5 Vp-p, TP421: 2.5 Vp-p (Incoming light illumination; about 1.1 mW)

Note

When the above described signal level is set, the normal picture cannot be obtained because the output video signal of the DE-55 board is under the excessive input level conditions.

a) Check the modulated video signal (or carrier signal) waveform at TP401 and TP421 on the DE-55 board in order to identify which of the IPM-92A board or IPM-93A board is defective.
   → When TP401 waveform is abnormal; IPM-92A board is defective. When TP421 waveform is abnormal; IPM-93A board is defective.

b) Check DC voltage at CN402 on the DE-55 board, or pin-5 of CN403 to photodiode (ANALOG_27 V) and pin-3 of CN403 (ANALOG_5 V) in order to confirm that the power is correctly supplied.
   → When the power is supplied correctly; pin-5 of CN402 and CN403: 27 ±3 V, pin-3 of CN402 and CN403: 5 ±0.5 V.
   → When the power is found not supplied correctly; refer to the next paragraph “3. When the DE-55 board is suspected to be defective”.

c) Check that the 5 V power supply (ANALOG_5 V) and reverse bias to photodiode (ANALOG_27 V) are supplied correctly by measuring the voltage difference between pins-2 and 4 of CN701 or CN801.
   → When they are normal; CN701 or CN801, pin-2: 27 ±3 V, pin-4: 5 ±0.5 V
   → When they have abnormality; Soldering of CN701 or CN801 is suspected to be defective, or flexible flat cable (FFC) has poor connection or is broken.

d) Check the modulated video output signal (or carrier output signal) waveform at D701 on the IPM-92A board or D801 on the IPM-93A board (pin-1 or pin-6) in order to check that the photodiodes are defective or not.
   → When they are normal; FM modulated wave appears (when video signal is input.), or sine wave of 20 mVp-p to 50 mVp-p appears. (when only the carrier signal is input)
   → When they have abnormality; The photodiodes are suspected to be defective or defective soldering is suspected.

e) If any abnormality cannot be found by the above described checks, transistors in the range of Q701 to Q704 (IPM-92A) or Q801 to Q804 (IPM-93A) are suspected to be defective.
   → Make an attempt to replace the transistors and check operation of the system. (Observe waveform at TP401 or TP421 on the DE-55 board.)

3. When the DE-55 board is suspected to be defective

- Select an oscilloscope setup of 20 MHz with band-width limit: OFF.
- Adjust the brightness of the incoming light until 400 mVp-p is obtained at TP401 and TP402.
- The circuit stage up to TP141 must be diagnosed by observing the waveform of the carrier signal and by checking the operating condition with no input signal fed to the infrared transmitter. The circuit stages after that must be diagnosed by observing the demodulated waveform and by checking the operating condition with the color bar signal being input to the infrared transmitter.

a) Check that the DC voltages that are supplied from the power supply to the respective blocks are correct or not.
   → When the DC voltages are normal, the voltages from MA-107/107P board are; TP491: 5 ±0.5 V, TP391: 9 ±0.5 V.
   → When DC voltages are abnormal; Soldering of CN101 is suspected to be defective, or flexible flat cable (FFC) has poor connection or is broken.

b) Check DC voltage at L491 and check the signal flow from TP401 to TP404. [RF amplifier]
   → When the circuit is normal, the waveforms [No. 1 to No. 5] that are shown on page 4-21 can be obtained with no input signal fed to the infrared transmitter.
   → When the circuit is found abnormal; Resoldering the poorly soldered joint in the circuit block of Ref. 400 to Ref. 409. Replace the transistor as needed.

c) Check DC voltage at L492 and check the signal flow from TP421 to TP424. [RF amplifier]
   → When the circuit is normal, the waveforms [No. 1 to No. 5] that are shown on page 4-21 can be obtained with no input signal fed to the infrared transmitter.
   → When the circuit is found abnormal; in the circuit block of Ref. 420 to Ref. 439. Replace the transistor as needed.

d) Check DC voltage at L491. [ANALOG_5.9 V]
   → When the circuit is normal; 5.9 ±0.5 V
   → When the circuit is found abnormal; Resoldering the poorly soldered joint in the circuit block in which abnormality has occurred. Replace the transistor Q901 or others as needed.

e) Check Q110 for correct operation by observing the output waveform at TP101. [BUFFER]
   → When the circuit is normal, the waveform [No. 6] that is shown on page 4-21 can be obtained with no input signal fed to the infrared transmitter.
   → When the circuit is found abnormal; Resoldering the poorly soldered joint in the circuit block in which abnormality has occurred. Replace the transistor Q110 or others as needed.

f) Check IC101 for correct operation by observing the output waveform at TP102. [LIMITTER]
   → When the circuit is normal, the waveform [No. 7] that is shown on page 4-22 can be obtained with no input signal fed to the infrared transmitter.
   → When the circuit is found abnormal; Resoldering the poorly soldered joint in the circuit block in which abnormality has occurred. Replace IC101 or others as needed.

g) Check IC121 for correct operation by observing the output waveform at TP122. [DEMODULATOR]
→ When the circuit is normal, the waveform [No. 8] that is shown on page 4-21 can be obtained with no input signal fed to the infrared transmitter.
→ When the circuit is found abnormal; Resoldering the poorly soldered joint in the circuit block in which abnormality has occurred. Replace IC121 or others as needed.

h) Check DC voltage at L492. [Power supply line of low-pass filter (integrator)]
→ When the circuit is normal; 5.0 ±0.5 V
→ When the circuit is found abnormal; Replace L192.

• When no input signal is fed to the infrared transmitter

i) Check waveform at TP141. [Low-pass filter (integrator)]
→ When the circuit is normal, the waveform [No. 9] that is shown on page 4-22 can be obtained. (no input signal fed to the infrared transmitter)
→ When the circuit is found abnormal; If any output signal is generated while no input signal is fed to the infrared transmitter, it is considered abnormal because the carrier signal without any input generates no output signal after it is demodulated.

∗ However, when an infrared transmitter is not operating (in such cases that the main power of the infrared transmitter is not turned on), some output signals are generated because the system noise or external disturbances due to natural light is amplified by the limiter.

• When color bar signal is input to the infrared transmitter

j) Check the output waveform at TP141. [Low-pass filter (integrator)]
→ When the circuit is normal, the waveform [No. 10] that is shown on page 4-22 can be obtained.
→ When the above waveform cannot be obtained, the circuit is suspected to be abnormal; Resoldering the poorly soldered joint in the circuit block in which abnormality has occurred. Replace Q140 or others as needed.

k) Check IC141 (1/2) for its correct operation by observing the output waveform on TP142. [DE-EMPHASIS]
→ When the circuit is normal, the waveform [No. 11] that is shown on page 4-22 can be obtained.
→ When the above waveform cannot be obtained, the circuit is suspected to be abnormal; Resoldering the poorly soldered joint at R148, R149, C147 and C148. Replace IC141 or others as needed.

l) Check IC142 for its correct operation by observing the output waveform at TP143. (Video signal check) [VIDEO AMP]
→ When the circuit is normal, the waveform [No. 12] that is shown on page 4-22 can be obtained.
→ When the above waveform cannot be obtained, the circuit is suspected to be abnormal; Resoldering the poorly soldered joint of resistors and capacitors in the peripheral of IC142. Replace IC142 or others as needed.

m) Check the muting function by observing the output waveform at TP143. [MUTE CONTROL]
→ When the muting function works normally, no output is produced because the mute function works when operation of the infrared transmitter is stopped or incoming infrared light is completely intercepted before reaching the receptor.
→ When any output signal is produced under the above described condition or when the video signal is not output even though the infrared transmitter modulates and transmits the video signal, the circuit is suspected to be abnormal.
Resoldering the poorly soldered joint of the components having reference number 160 series. Or replace D161, Q161 to Q164 one after another and find out the location of error by confirming the waveform.

* The composite horizontal and vertical sync signal is separated from the video signal at the circuit before the D161 anode. The sync signal is rectified at the D161 cathode, then video signal detection is performed at Q163 and Q902. When the video signal is not detected, mute control is driven at the input circuit of the final video amplifier stage. Therefore, mute control can be judged if it works correctly or not by checking the Q164 base potential.

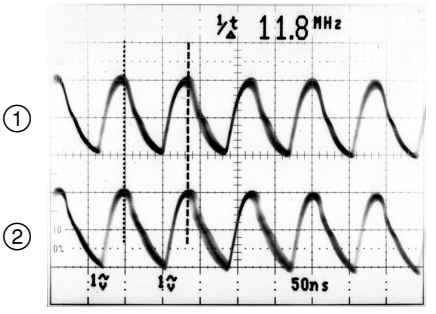
4. When RX-47A is suspected to be defective

a) If any signal cannot be check at IC451 pin-1 while receiving the incoming SIRCS signal.
→ Replace IC451.
b) If SIRCS signal cannot be checked at TP451 even the above step a is confirmed.
→ Replace IC452.
c) If SIRCS signal cannot be checked at MA-107/107P side.
→ Poor soldering of CN404. Replace CN404 or others as needed.

No. 1

① TP401 ② TP421

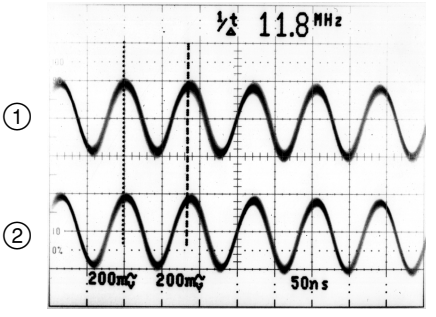
∗ HSA-IF1, distance 50 cm
Input signal : None



No. 2

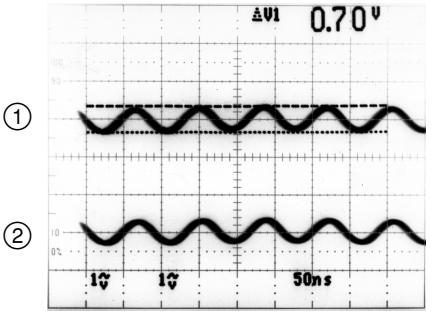
① TP401 ② TP421

∗ HSA-IF1
Adjust the transmitting angle of the transmitter until the angular amplitude becomes 400 mVp-p.



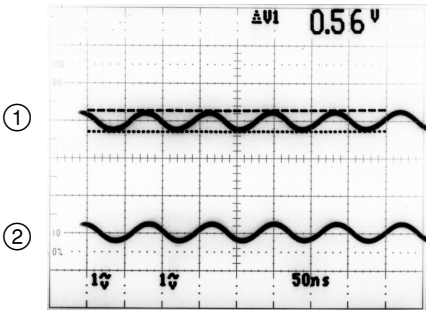
No. 3

① TP402 ② TP422



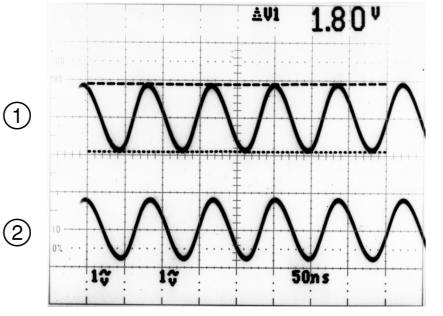
No. 4

① TP403 ② TP423



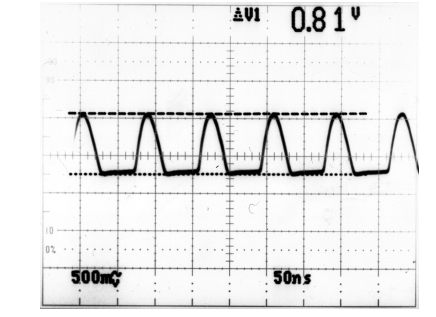
No. 5

① TP404 ② TP424

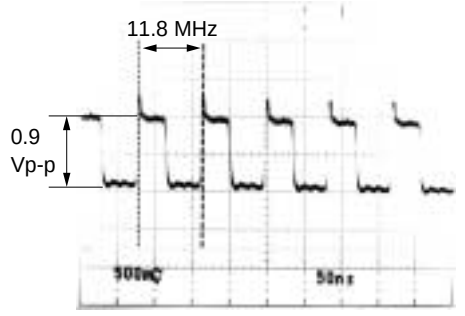


No. 6

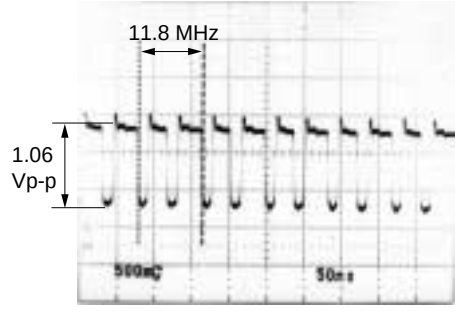
TP101



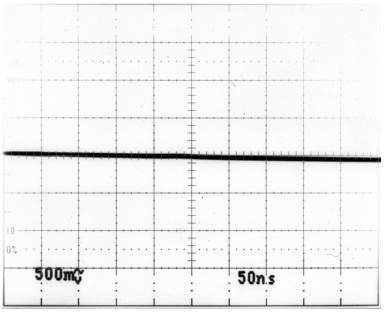
No. 7
TP102



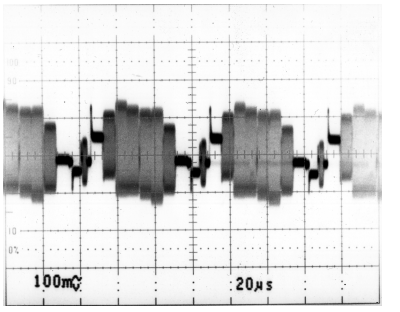
No. 8
TP121



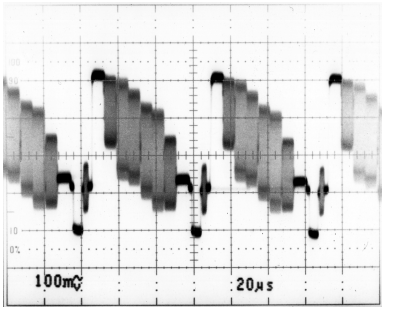
No. 9
TP141



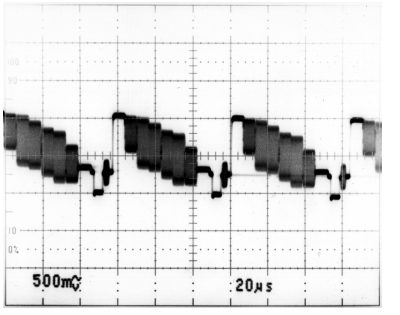
No. 10
TP141



No. 11
TP142



No. 12
TP143



4-2. Self-diagnostics Function

4-2-1. About Self-diagnostics Function

Confirm the symptoms and their corresponding errors using Sections “4-1. Check Items Before Starting Self-diagnostics” and “4-2-1. About Self-diagnostics Function”. Confirming the symptoms and their corresponding errors as described above indicates whether the error is caused by operation error of users or whether repairing the circuit board of the PCS-1600/1600P is necessary or not. When the cause of error can be located by replacing the circuit boards or options, replace the parts/components and check operation following the self-diagnostics flow charts. When repairing a circuit board becomes necessary, activate the self-diagnostics and perform repairing. Start with the (0-0) step of the self-diagnostics flow charts. Problems are found during the course of self-diagnostics. If cause of error cannot be identified by the self-diagnostics flow charts, perform “4-2-2. Diagnostics on Each Block” of the block that is suspected to be defective from the trouble symptoms.
When repair is completed, perform the operation check in accordance with the following notes.

- Because there can be cases that the built-in flash memories are cleared, it is recommended to install the newest software before starting repair work.

- The reference numbers and pin numbers are indicated as Ref. No. [pin No.].
  Voltage between pins is indicated as Ref. No. [pin No. - pin No.].

- Set the communication conditions of the terminal that is connected to the DIAG port as follows. Use a sex-inverted cable for connecting the communication terminal.

Communication speed	: 38400 bps
Data Length	: 8 bits
Start bit	: 1 bit
Stop bit	: 1 bit
Parity	: None
Flow control	: Xon/Xoff

- The diagnostics mode can be started up from the terminal that is connected to the DIAG port by turning on the main power while pressing the [CTRL] + D keys.
  When flow chart or description has the following expression:
  #diag□auto↓
  It indicates entry into the prompt line in the diagnostics mode.
  At the same time, □ indicates pressing a space key and ↓ indicates pressing the ENTER key.

- When flow chart or description has the following expression:
  >mail□12,3456790↓
  It indicates entry into the prompt line in the application.
  At the same time, □ indicates pressing a space key and ↓ indicates pressing the ENTER key.

Notes

- When repairing is completed, be sure to start with the step (0-0) and confirm that the PCS-1600/1600P passes all the diagnostics items.
  Then connect the PCS-1600/1600P to the loop back line of a Telecommunication Company and confirm that your pictures and sound are being outputted.
- When the instructions such as the 2B, 6B connection or loop back instruction in the middle of a flow chart, confirm that the actual communication is 2B, 6B using the communication status indication after completion of connection or loop back.
- When replacing the Flash Memory (IC103 and IC104), perform the following setting.
  In addition, when replacing the Flash Memory, make sure replace them both at a time.

(1) Destination setting

Before starting any checks, it is required to perform the destination setting below.
If following entry is not performed, it is impossible to make any checks.

1) For NTSC setting, enter the #writeDestination□NTSC↓.
2) For PAL setting, enter the #writeDestination□PAL↓.

(2) Setting the checks finished flag

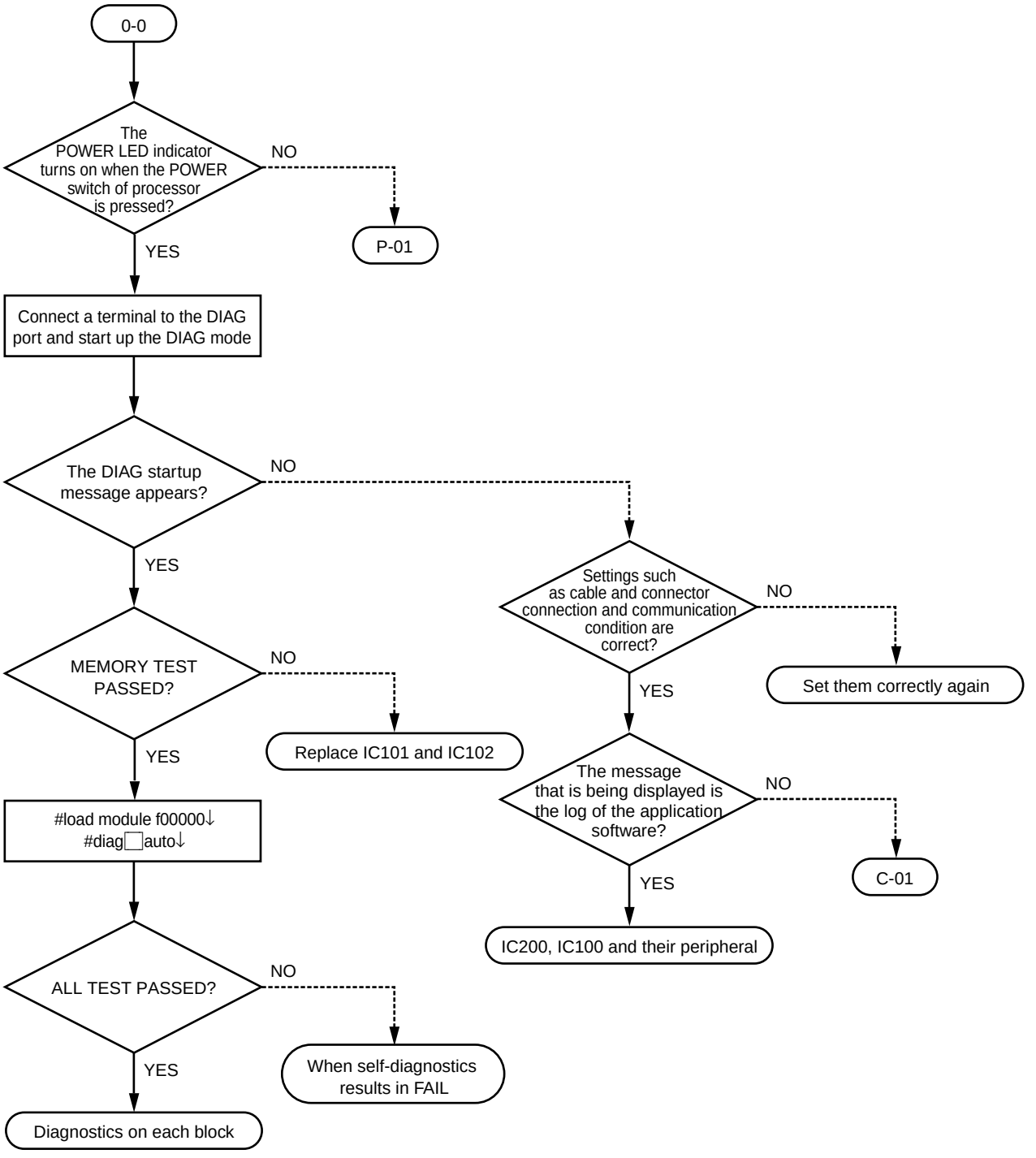
After all checks are passed, enter the #write DiagStatus□PASSED↓.
If above entry is not performed, it is impossible to start up the application software.

(3) Installing the application software

After application software is installed, perform the confirmation of operation.
(When install it to the unit, it is required to setting that corresponding to the options. For more detail, refer to the technical memorandum.)

* Besides, it is required to perform the setting of MAC address. It is also required to setting of the serial number in case that installing the board to the unit. For these setting, refer to the technical memorandum or consult your nearest Sony Service Center.)

http://getMANUAL.com



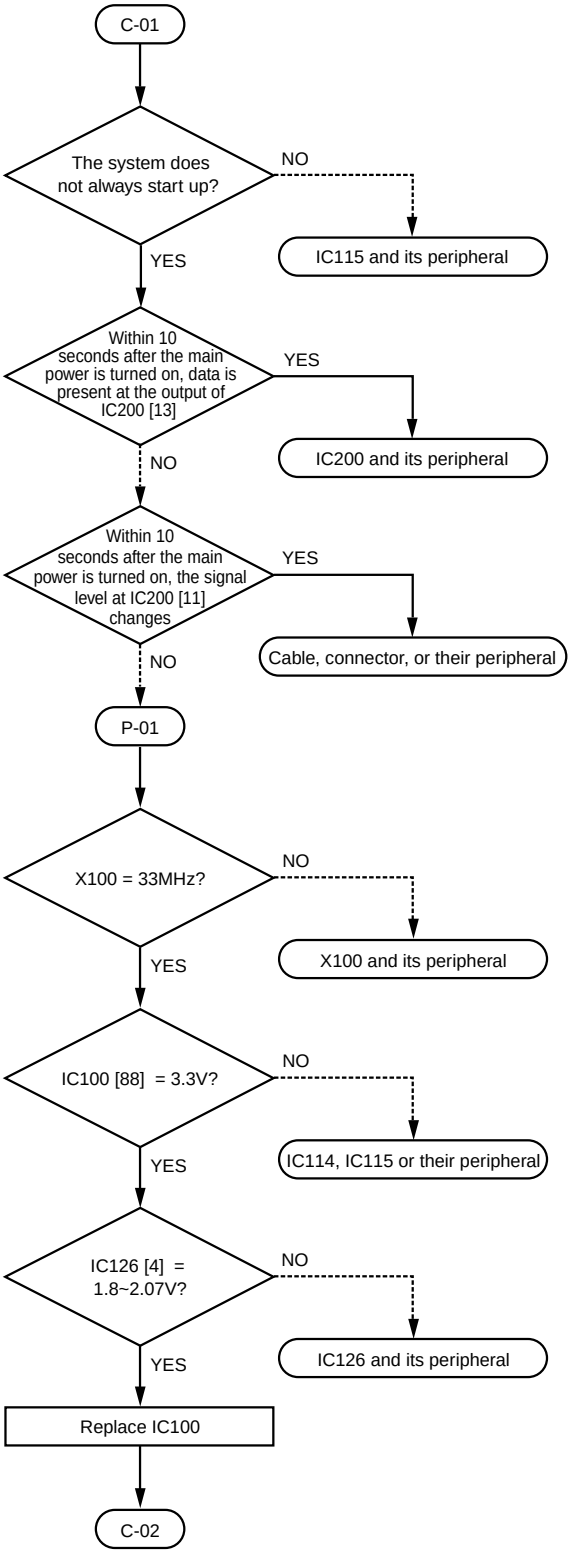
Notes

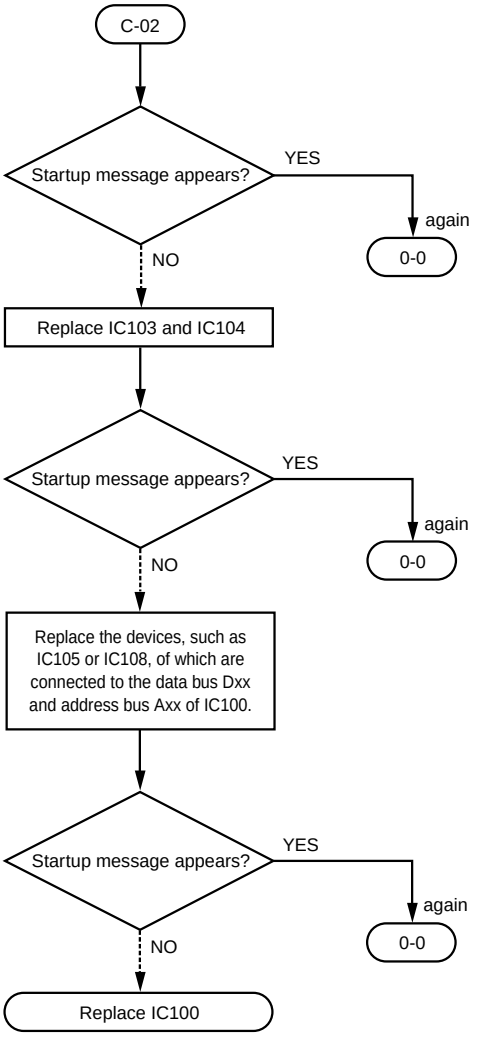
When replacing the Flash Memory (IC103 and IC104), it is required to perform the following setting.

(1) Destination setting (NTSC/PAL)

(2) Setting the checks finished flag

(3) Installing the application software (For more detail, refer to Sec.4-23.)





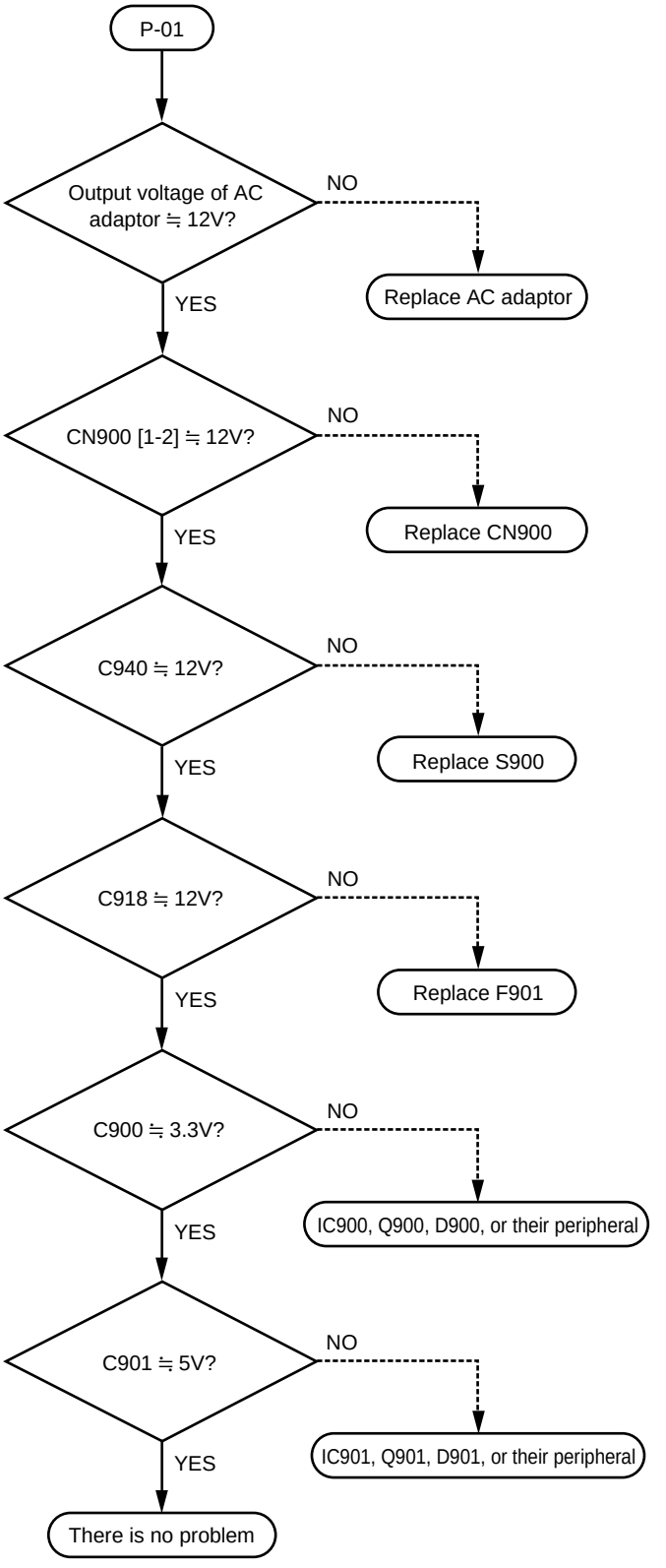
Notes

When flash memory (IC103, IC104) is replaced, be sure to input the following command:

#diag□Completion Mark↓

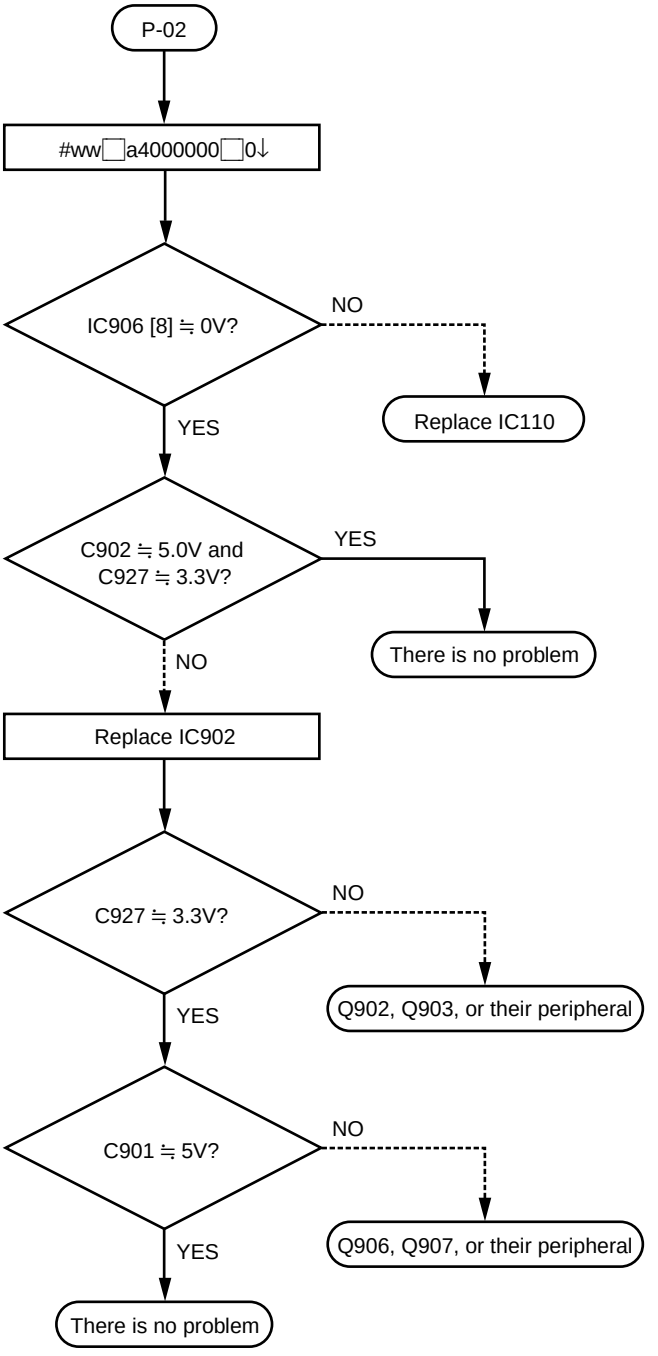
If the command is not input, application software cannot be started up.

Abter the command is inputted, it is requined that inserting the memory cord of the appeication and downloading the software



Note

When you have entered from other diagnostics flow chart to this flow chart P-01, and when you have ended the flow chart P-01 with the result " There is no problem", return to the original flow chart and continue its diagnosing.

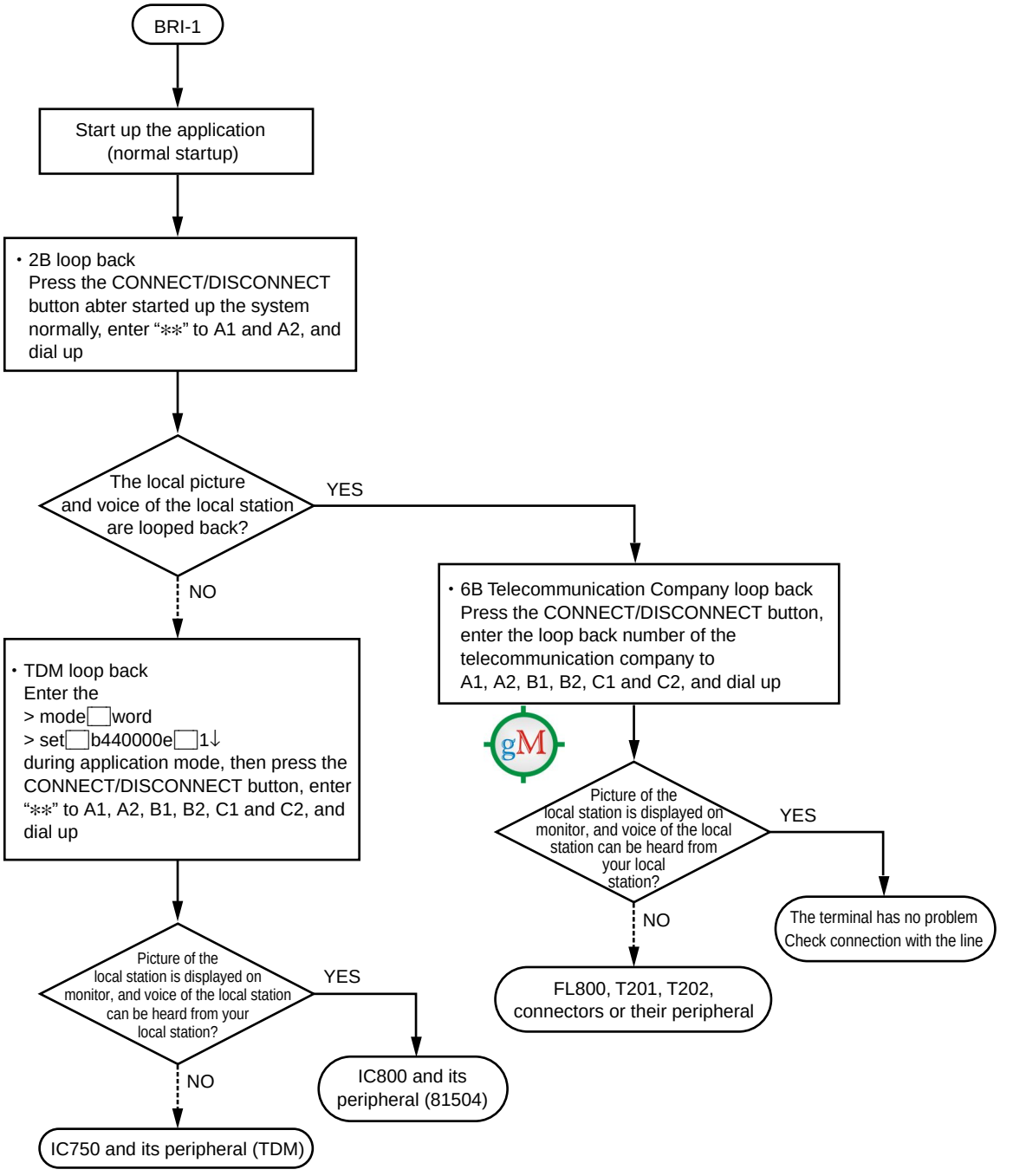


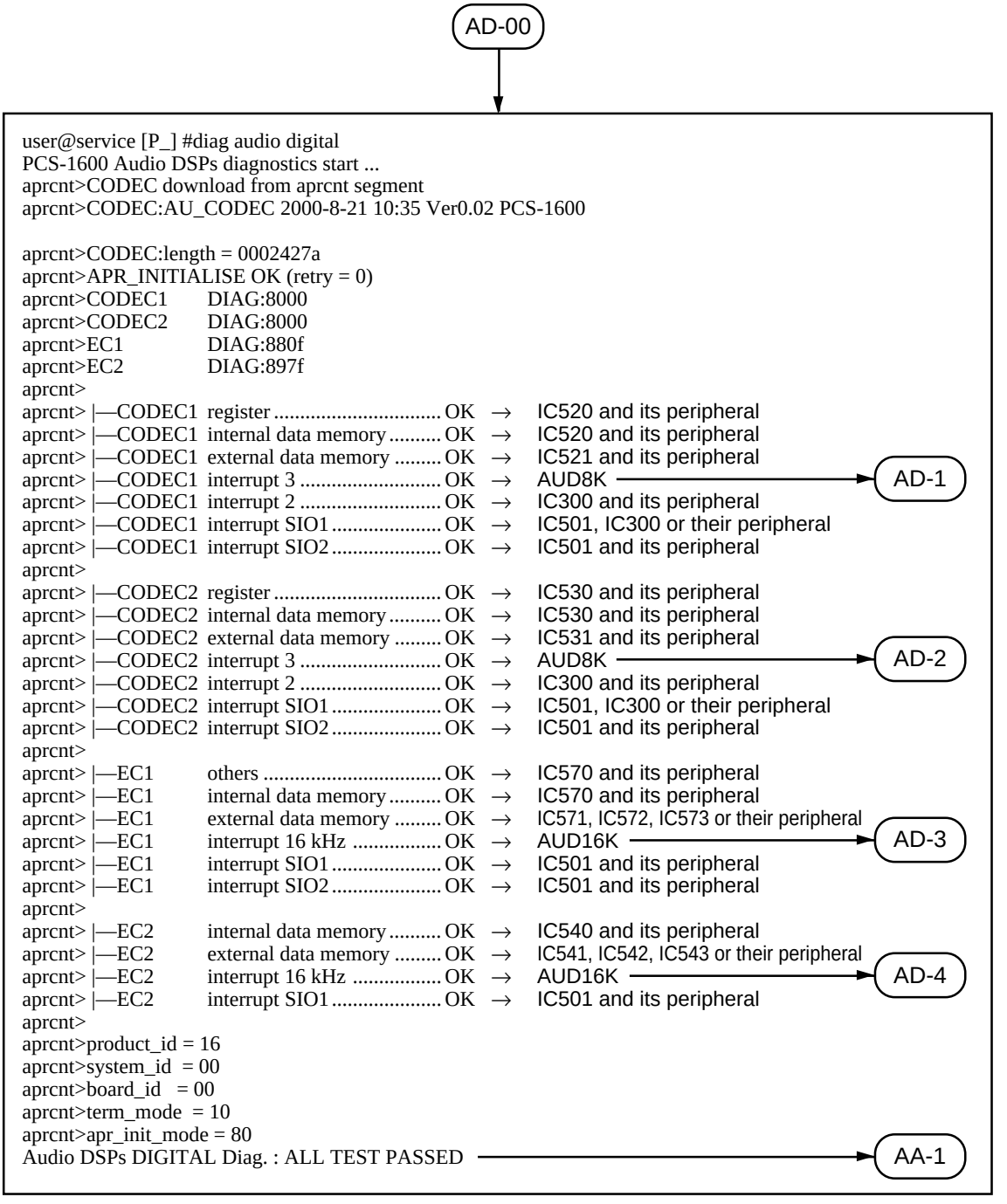
Note

When you have entered from other diagnostics flow chart to this flow chart P-01, and when you have ended the flow chart P-01 with the result " There is no problem", return to the original flow chart and continue its diagnosing.

4-2-2. Diagnostics on Each Block

- BRI (when the line is unable to connect) BRI-1
- Audio AD-00
- IF-823 board IF823-1
- IF-824 board IF824
- SIRCS (transmitter block) IR-1
- SIRCS (receiver block) RC-1
- PCMCIA MC-1
- USER DATA PORT UD-1


BRI-1
Start up the application (normal startup)
・2B loop back
Press the CONNECT/DISCONNECT button abter started up the system normally, enter "**" to A1 and A2, and dial up
The local picture and voice of the local station are looped back?
YES
NO
・6B Telecommunication Company loop back
Press the CONNECT/DISCONNECT button, enter the loop back number of the telecommunication company to A1, A2, B1, B2, C1 and C2, and dial up
・TDM loop back
Enter the
> mode□word
> set□b440000e□1↓
during application mode, then press the CONNECT/DISCONNECT button, enter "**" to A1, A2, B1, B2, C1 and C2, and dial up
Picture of the local station is displayed on monitor, and voice of the local station can be heard from your local station?
YES
NO
IC800 and its peripheral (81504)
IC750 and its peripheral (TDM)
Picture of the local station is displayed on monitor, and voice of the local station can be heard from your local station?
YES
NO
The terminal has no problem
Check connection with the line
FL800, T201, T202, connectors or their peripheral


AD-00
user@service [P_] #diag audio digital
PCS-1600 Audio DSPs diagnostics start ...
aprcnt>CODEC download from aprcnt segment
aprcnt>CODEC:AU_CODEC 2000-8-21 10:35 Ver0.02 PCS-1600
aprcnt>CODEC:length = 0002427a
aprcnt>APR_INITIALISE OK (retry = 0)
aprcnt>CODEC1 DIAG:8000
aprcnt>CODEC2 DIAG:8000
aprcnt>EC1 DIAG:880f
aprcnt>EC2 DIAG:897f
aprcnt> |—CODEC1 register ..... OK → IC520 and its peripheral
aprcnt> |—CODEC1 internal data memory ..... OK → IC520 and its peripheral
aprcnt> |—CODEC1 external data memory ..... OK → IC521 and its peripheral
aprcnt> |—CODEC1 interrupt 3 ..... OK → AUD8K
AD-1
aprcnt> |—CODEC1 interrupt 2 ..... OK → IC300 and its peripheral
aprcnt> |—CODEC1 interrupt SIO1 ..... OK → IC501, IC300 or their peripheral
aprcnt> |—CODEC1 interrupt SIO2 ..... OK → IC501 and its peripheral
aprcnt> |—CODEC2 register ..... OK → IC530 and its peripheral
aprcnt> |—CODEC2 internal data memory ..... OK → IC530 and its peripheral
aprcnt> |—CODEC2 external data memory ..... OK → IC531 and its peripheral
aprcnt> |—CODEC2 interrupt 3 ..... OK → AUD8K
AD-2
aprcnt> |—CODEC2 interrupt 2 ..... OK → IC300 and its peripheral
aprcnt> |—CODEC2 interrupt SIO1 ..... OK → IC501, IC300 or their peripheral
aprcnt> |—CODEC2 interrupt SIO2 ..... OK → IC501 and its peripheral
aprcnt> |—EC1 others ..... OK → IC570 and its peripheral
aprcnt> |—EC1 internal data memory ..... OK → IC570 and its peripheral
aprcnt> |—EC1 external data memory ..... OK → IC571, IC572, IC573 or their peripheral
aprcnt> |—EC1 interrupt 16 kHz ..... OK → AUD16K
AD-3
aprcnt> |—EC1 interrupt SIO1 ..... OK → IC501 and its peripheral
aprcnt> |—EC1 interrupt SIO2 ..... OK → IC501 and its peripheral
aprcnt> |—EC2 internal data memory ..... OK → IC540 and its peripheral
aprcnt> |—EC2 external data memory ..... OK → IC541, IC542, IC543 or their peripheral
aprcnt> |—EC2 interrupt 16 kHz ..... OK → AUD16K
AD-4
aprcnt> |—EC2 interrupt SIO1 ..... OK → IC501 and its peripheral
aprcnt>product_id = 16
aprcnt>system_id = 00
aprcnt>board_id = 00
aprcnt>term_mode = 10
aprcnt>apr_init_mode = 80
Audio DSPs DIGITAL Diag. : ALL TEST PASSED
AA-1

Notes

When you want to diagnose the audio DSP, perform the video block diagnosis as shown below before starting diagnosing the audio DSP.

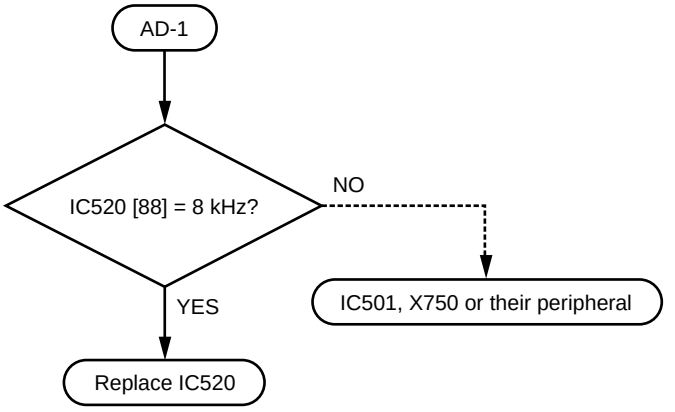
#diag␣video↓

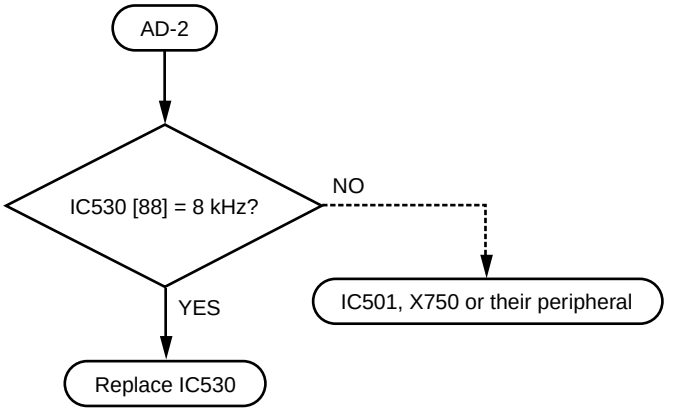
Immediately after entering it, check digital circuit of the DSPs as shown below.

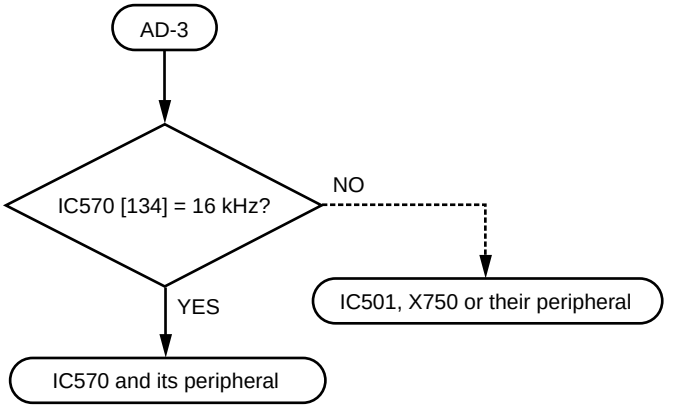
#diag␣audio␣digital↓

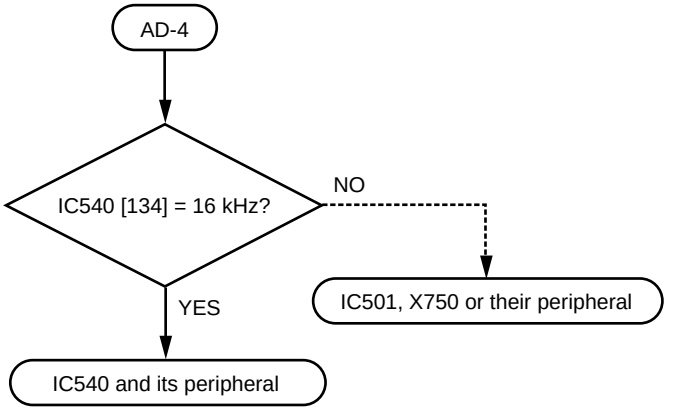
Then perform the analog block (AA-1, AA-2, AA-3) check.

When you want to diagnose the analog circuit of the audio block, the digital block of the audio block must have been completed in advance. Even when the video/audio digital tests have already been completed, correct result cannot be obtained if any commands that affect operations of the system including video circuit and power supply for audio DSP. Perform this command continuously.



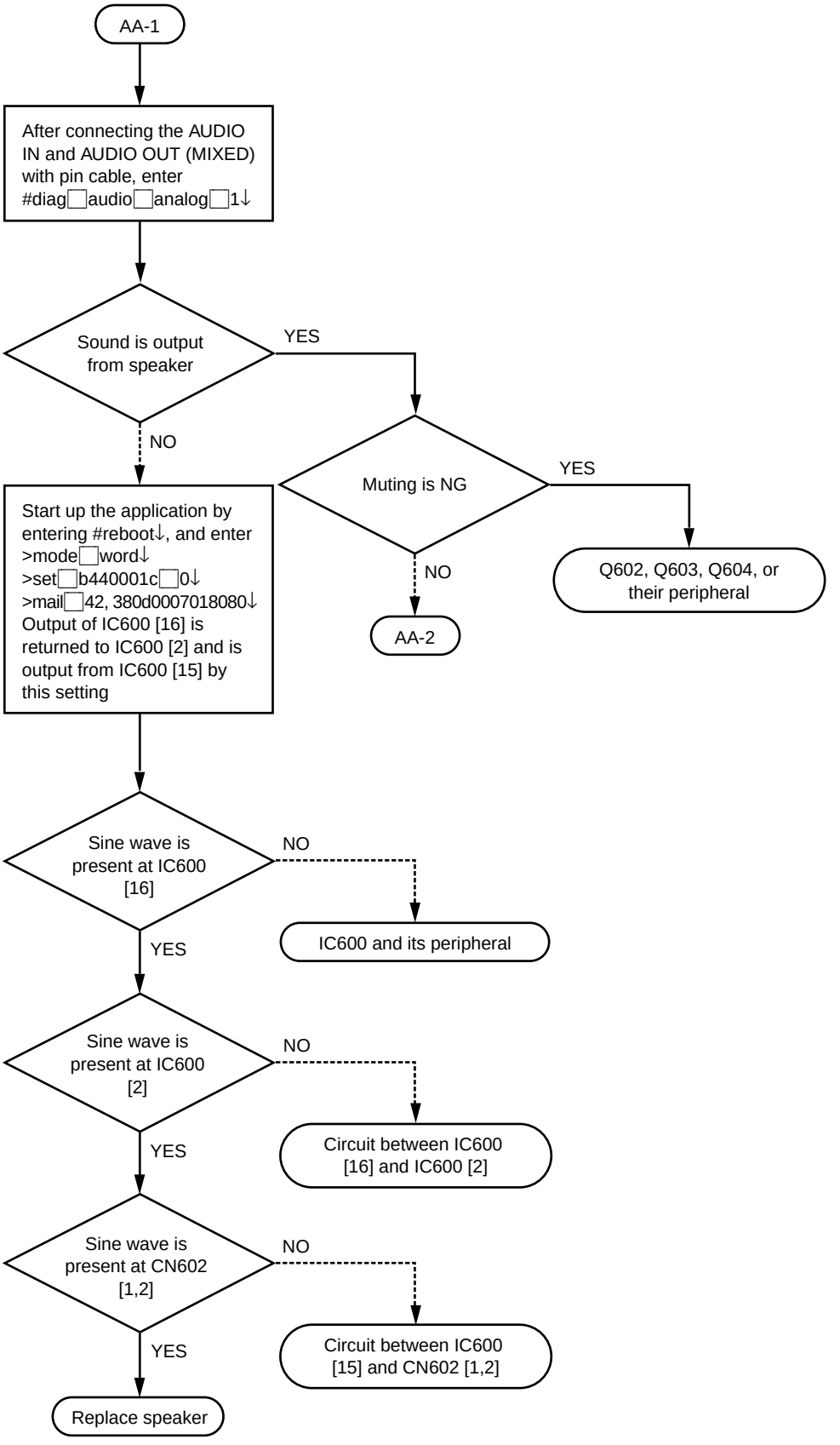






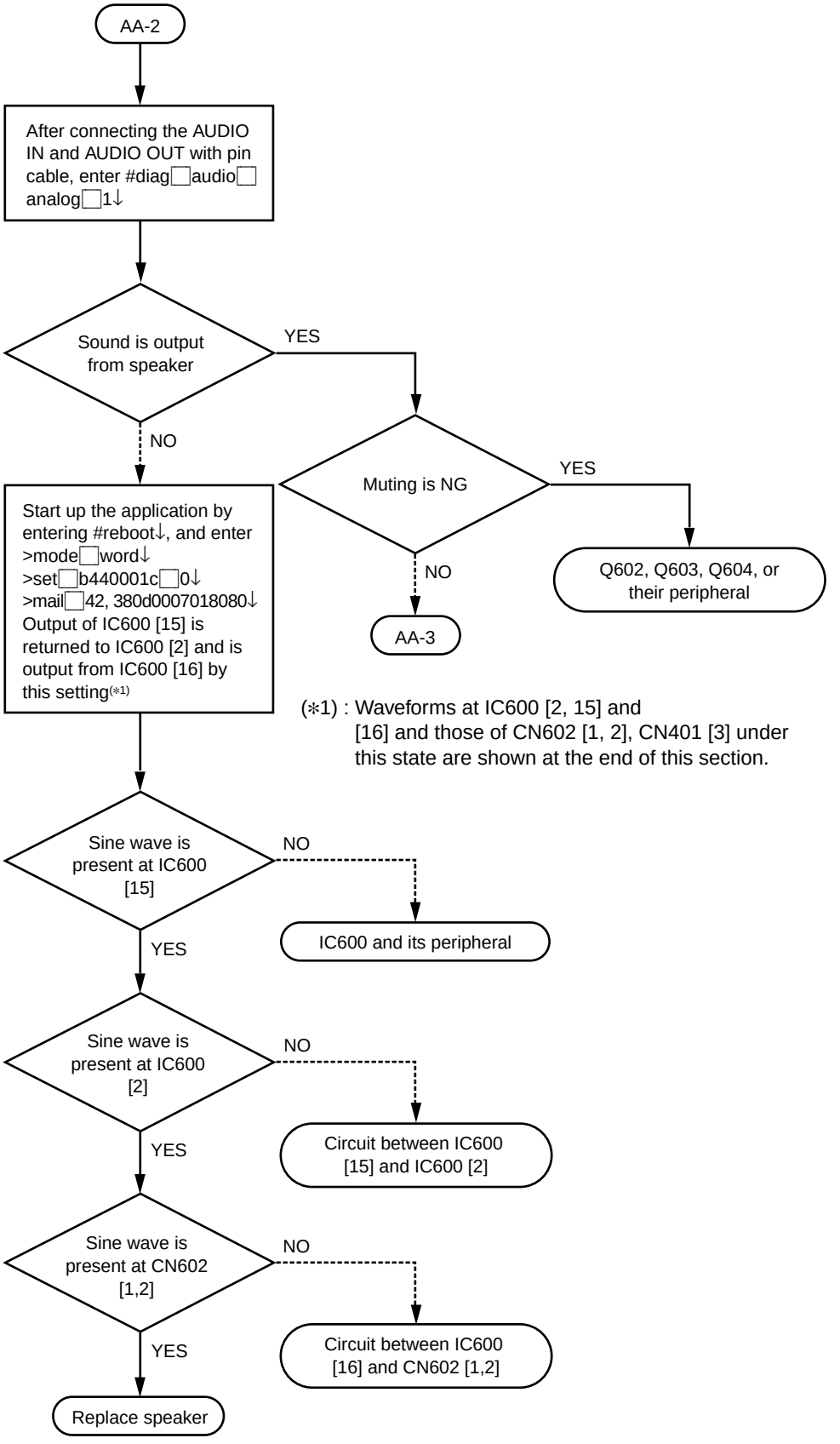
Note

When sound is not output although this check is OK, the audio serial bus controller (IC501), the PLL (IC500) of the audio block and its peripheral may have a trouble.



Note

To perform this diagnostics, the digital checks of the video block and audio DSP needs to be completed beforehand.

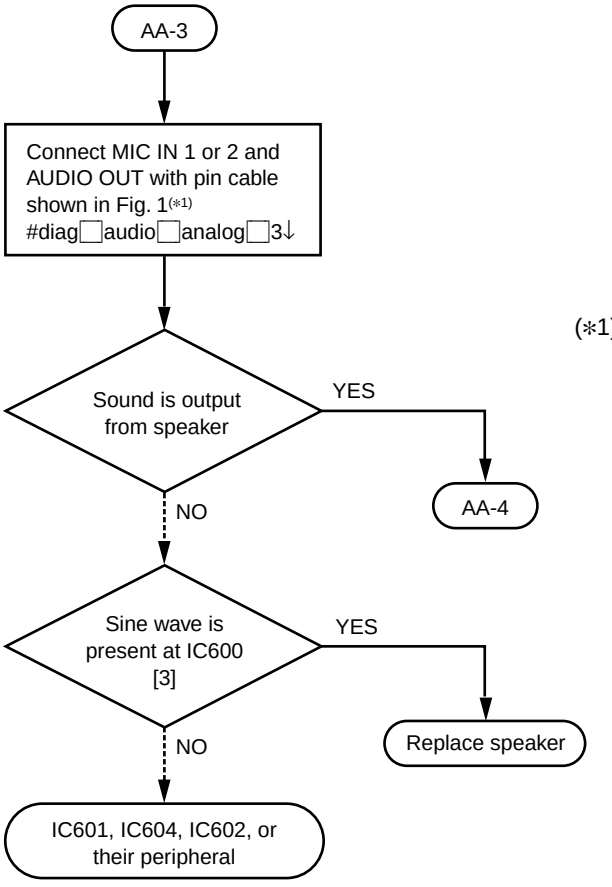

AA-2
After connecting the AUDIO IN and AUDIO OUT with pin cable, enter #diag□audio□ analog□1↓
Sound is output from speaker
YES
NO
Muting is NG
YES
NO
Q602, Q603, Q604, or their peripheral
AA-3
Start up the application by entering #reboot↓, and enter >mode□word↓ >set□b440001c□0↓ >mail□42, 380d0007018080↓ Output of IC600 [15] is returned to IC600 [2] and is output from IC600 [16] by this setting(*1)
Sine wave is present at IC600 [15]
NO
IC600 and its peripheral
YES
Sine wave is present at IC600 [2]
NO
Circuit between IC600 [15] and IC600 [2]
YES
Sine wave is present at CN602 [1,2]
NO
Circuit between IC600 [16] and CN602 [1,2]
YES
Replace speaker

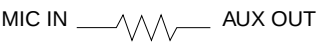
(∗1) : Waveforms at IC600 [2, 15] and [16] and those of CN602 [1, 2], CN401 [3] under this state are shown at the end of this section.

Note

To perform this diagnostics, the digital checks of the video block and audio DSP needs to be completed beforehand.

http://getMANUAL.com





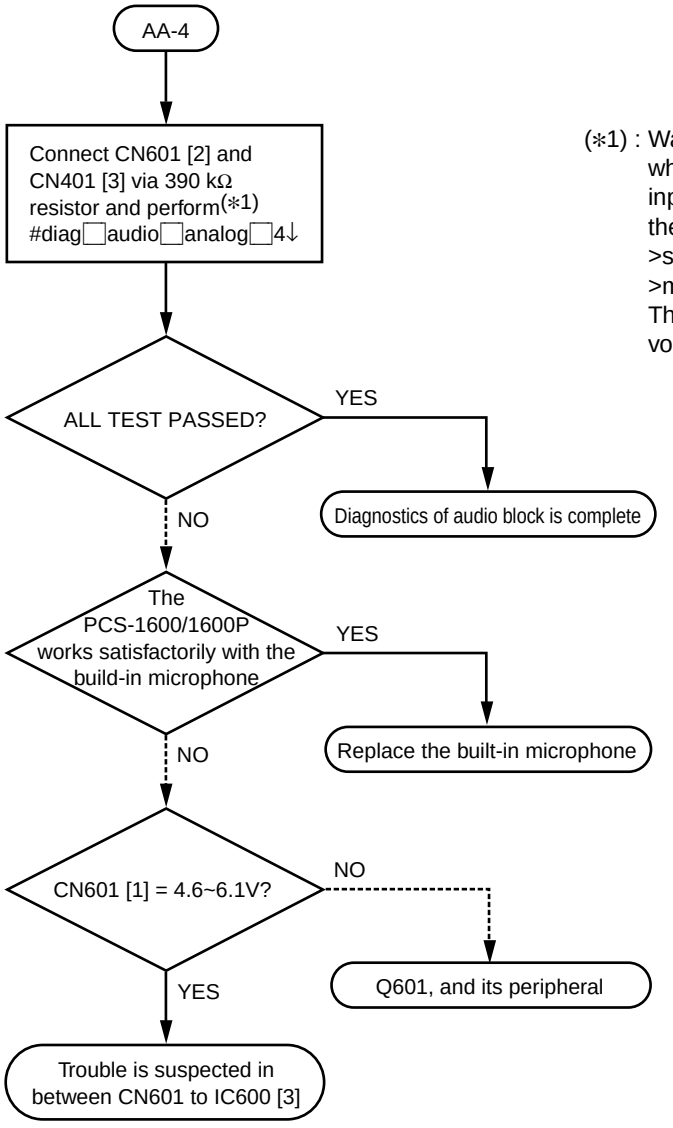
100 [kΩ]

Fig. 1

(*1) : Waveform at IC600 [3], IC604 [1,3], CN600 [4] and CN601 [2], when the application is started and the command is inputted as follows, under this state are shown at the end of this section.
>set□b440001c□0↓
>mail□42,380d0007018080↓
This enables to check the waveforms and voltage level.

Note

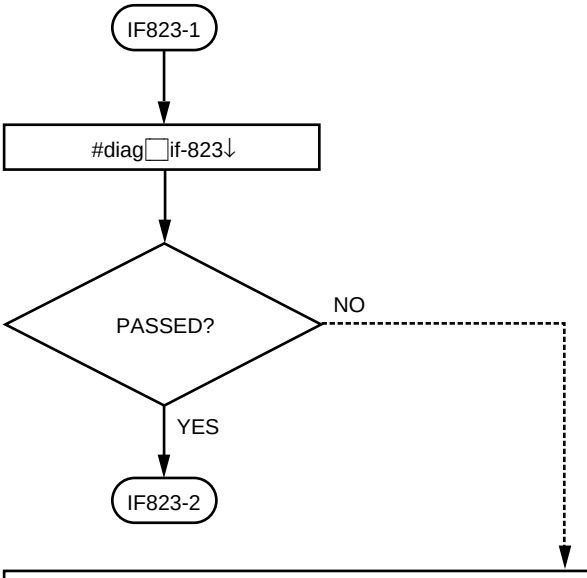
Before starting performing this diagnostics, the digital check of the video block and audio DSP needs to have been completed beforehand.



(*1) : Waveform at CN601 [2], IC604 [1] and IC600 [3], when the application is started and the command is inputted as follows, under this state are shown at the end of this section.
>set□b440001c□0↓
>mail□42,380d0007018080↓
This enables to check the waveforms and voltage level.

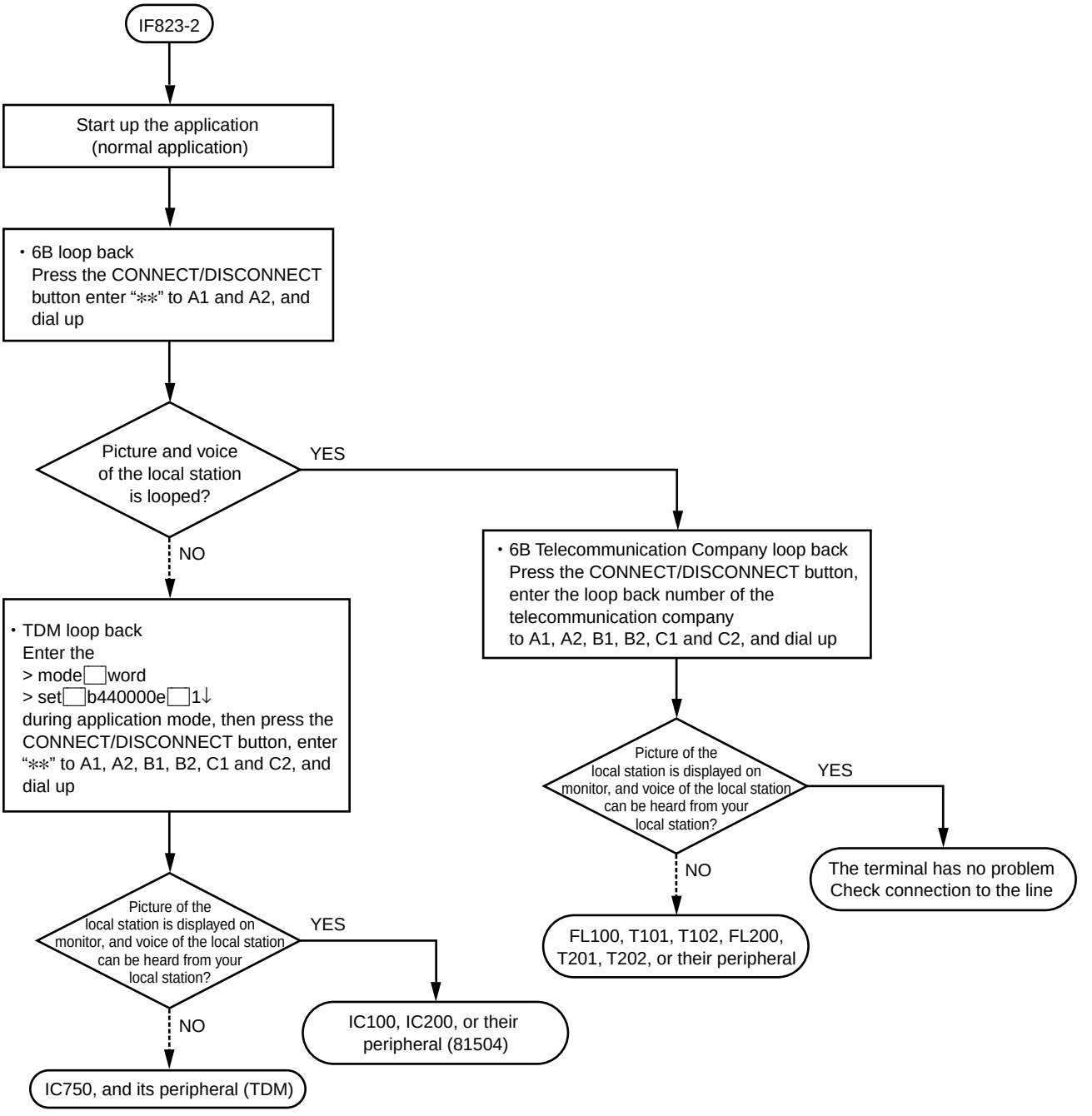
Note

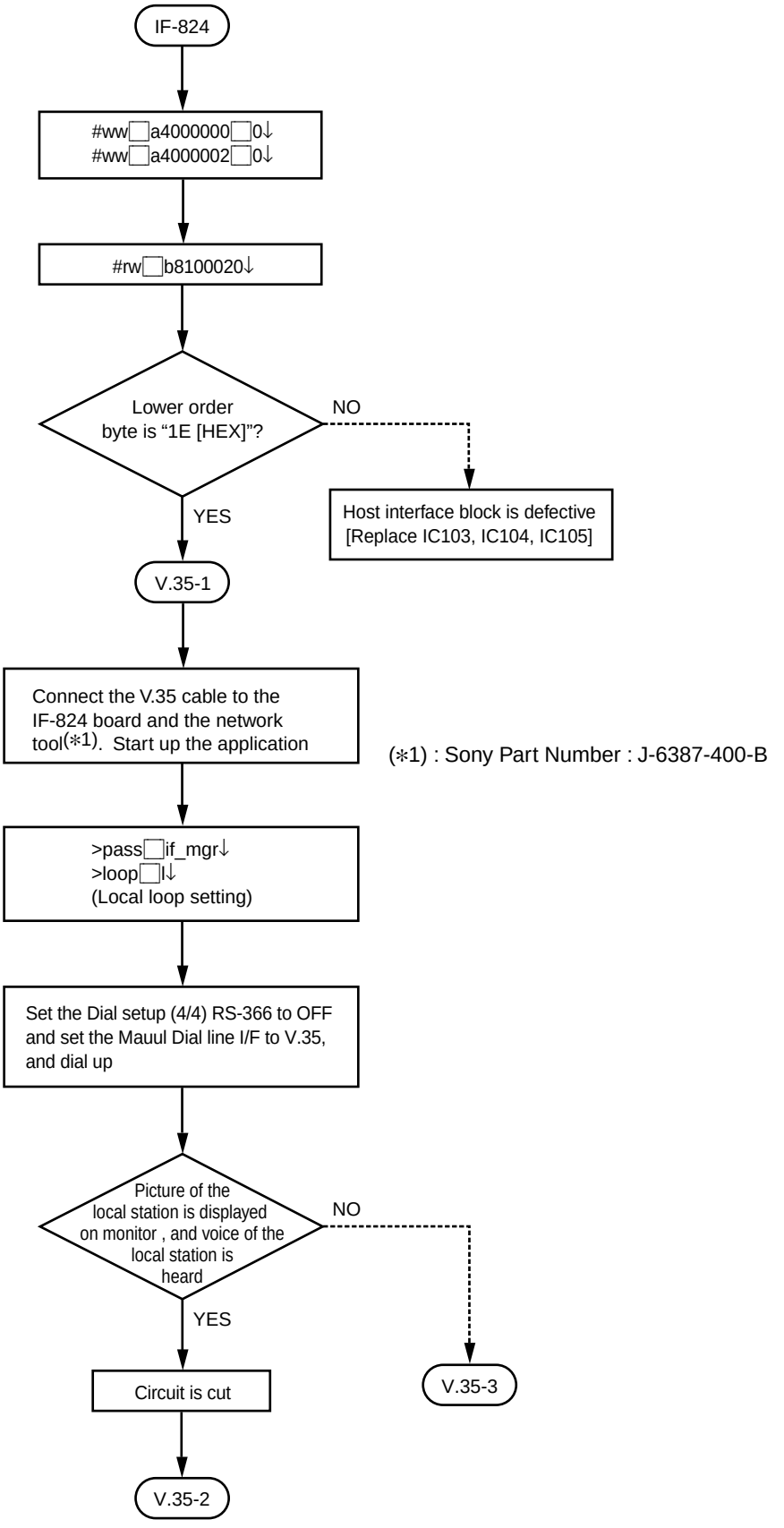
Before starting performing this diagnostics, the digital check of the video block and audio DSP needs to have been completed beforehand.

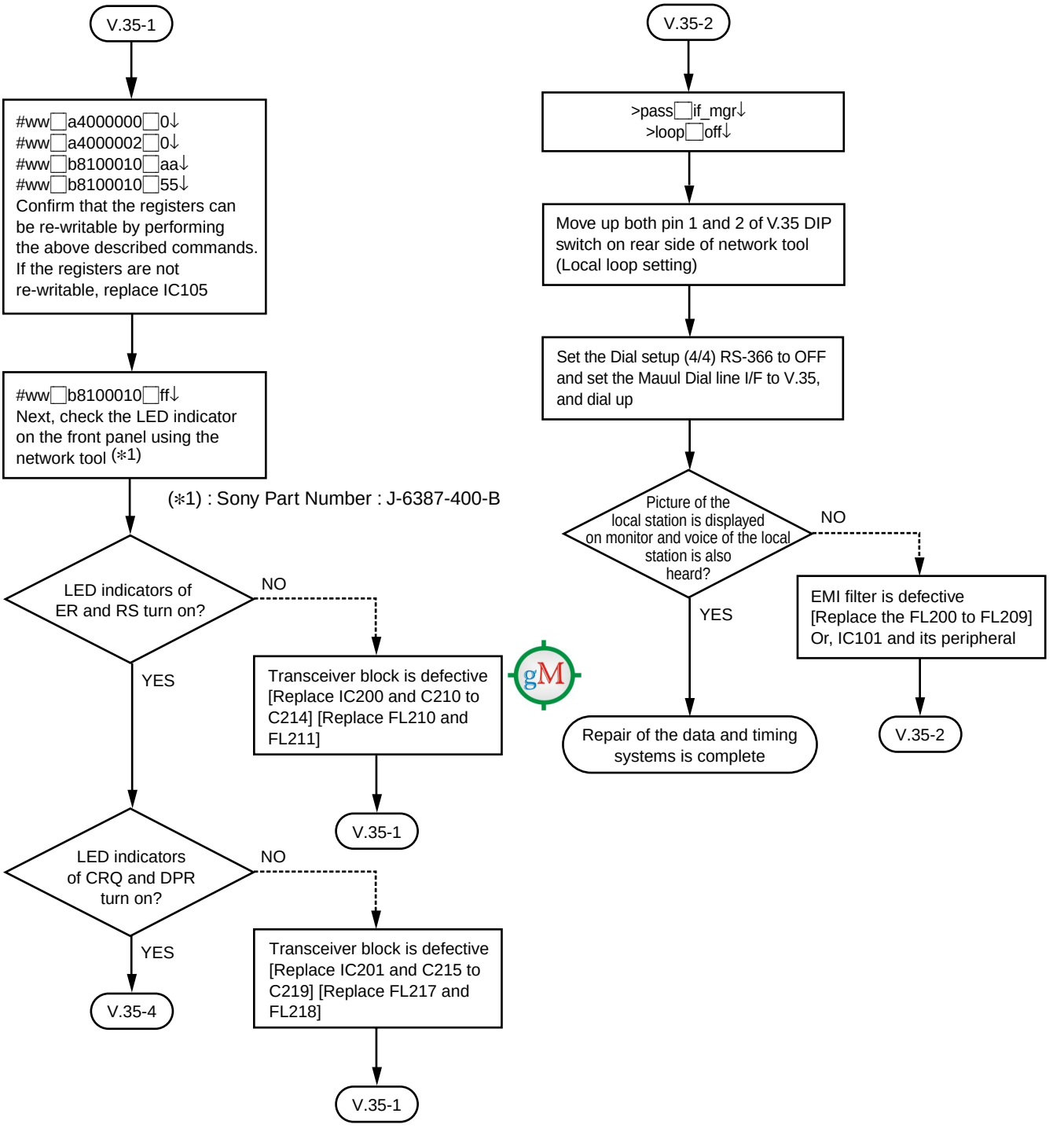


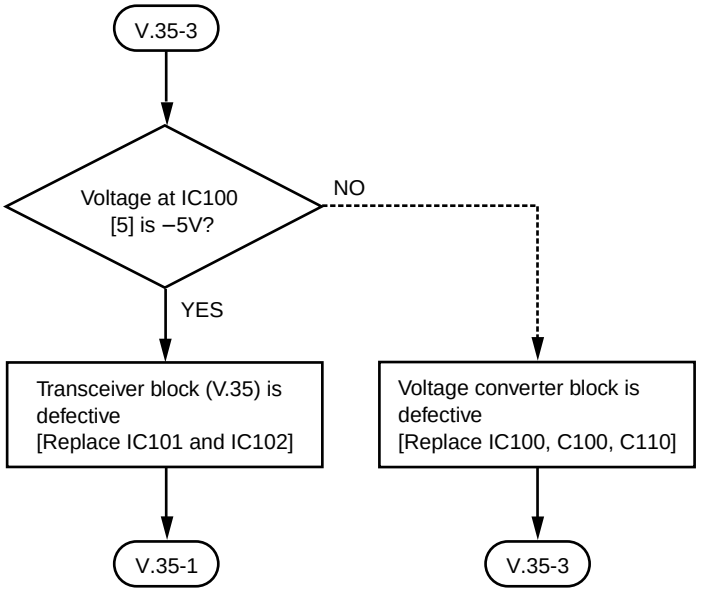
When the diagnostics has resulted in FAIL

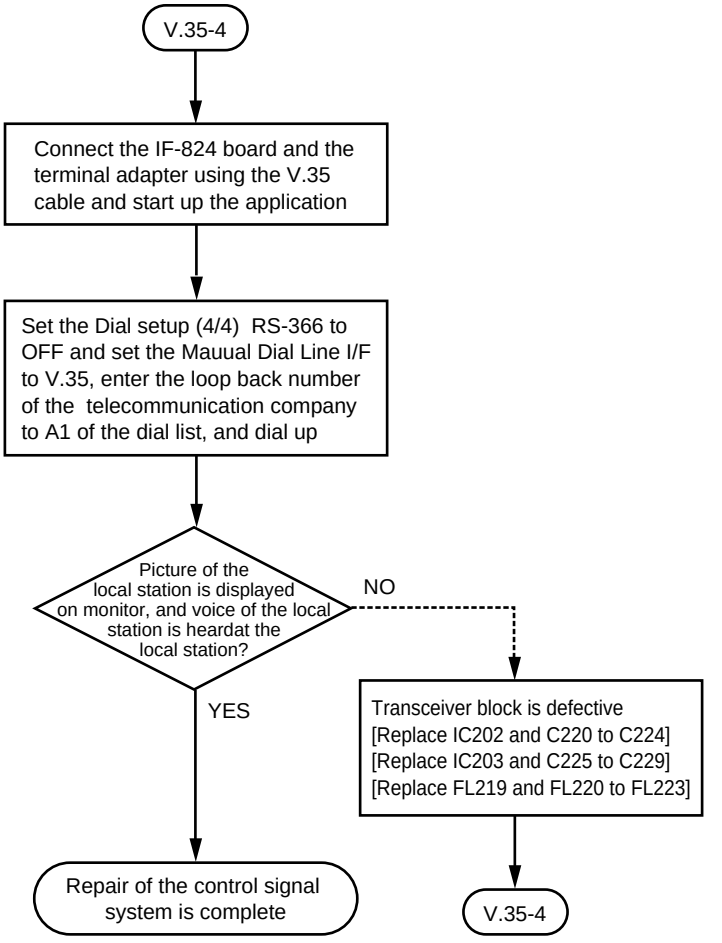
```
user@service[P_]#diag if-823
SYSTEM ALL INITIALIZE
  All Reset & power off => Power turn ON => Reset clear => OK

Option BRI (IF-823) diagnostics start...
  0.  BRI Option Board Detection : DETECTED
  1.  Set download mode
  2.  Testing SRAM for BRI firmware  : PASSED                 →  IC311, IC312 or their peripheral
  3.  Download BRI firmware : done
  4.  Set normal mode : done
  5a. Testing SRAM for firmware work area (BRI-2): PASSED  →  IC100 and its peripheral
  5b. Testing SRAM for firmware work area (BRI-3): PASSED  →  IC200 and its peripheral
  6a. Checking initialize message from BRI-2 : PASSED      →  IC100 and its peripheral
  6b. Checking initialize message from BRI-3 : PASSED      →  IC200 and its peripheral
  7.  BRI Firmware version : [3.27]
```

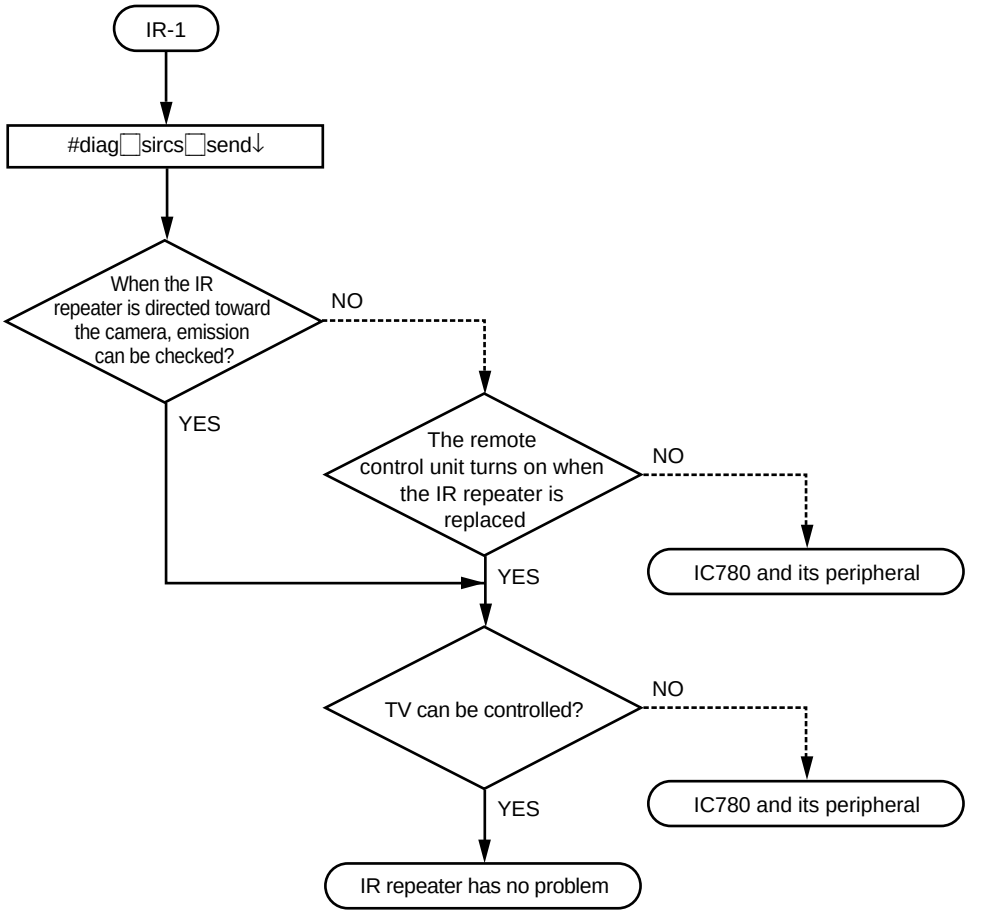

IF823-2
Start up the application (normal application)
・6B loop back
Press the CONNECT/DISCONNECT button enter "**" to A1 and A2, and dial up
Picture and voice of the local station is looped?
YES
NO
・6B Telecommunication Company loop back
Press the CONNECT/DISCONNECT button, enter the loop back number of the telecommunication company to A1, A2, B1, B2, C1 and C2, and dial up
・TDM loop back
Enter the
> mode□word
> set□b440000e□1↓
during application mode, then press the CONNECT/DISCONNECT button, enter "**" to A1, A2, B1, B2, C1 and C2, and dial up
Picture of the local station is displayed on monitor, and voice of the local station can be heard from your local station?
YES
NO
The terminal has no problem
Check connection to the line
FL100, T101, T102, FL200, T201, T202, or their peripheral
Picture of the local station is displayed on monitor, and voice of the local station can be heard from your local station?
YES
NO
IC100, IC200, or their peripheral (81504)
IC750, and its peripheral (TDM)

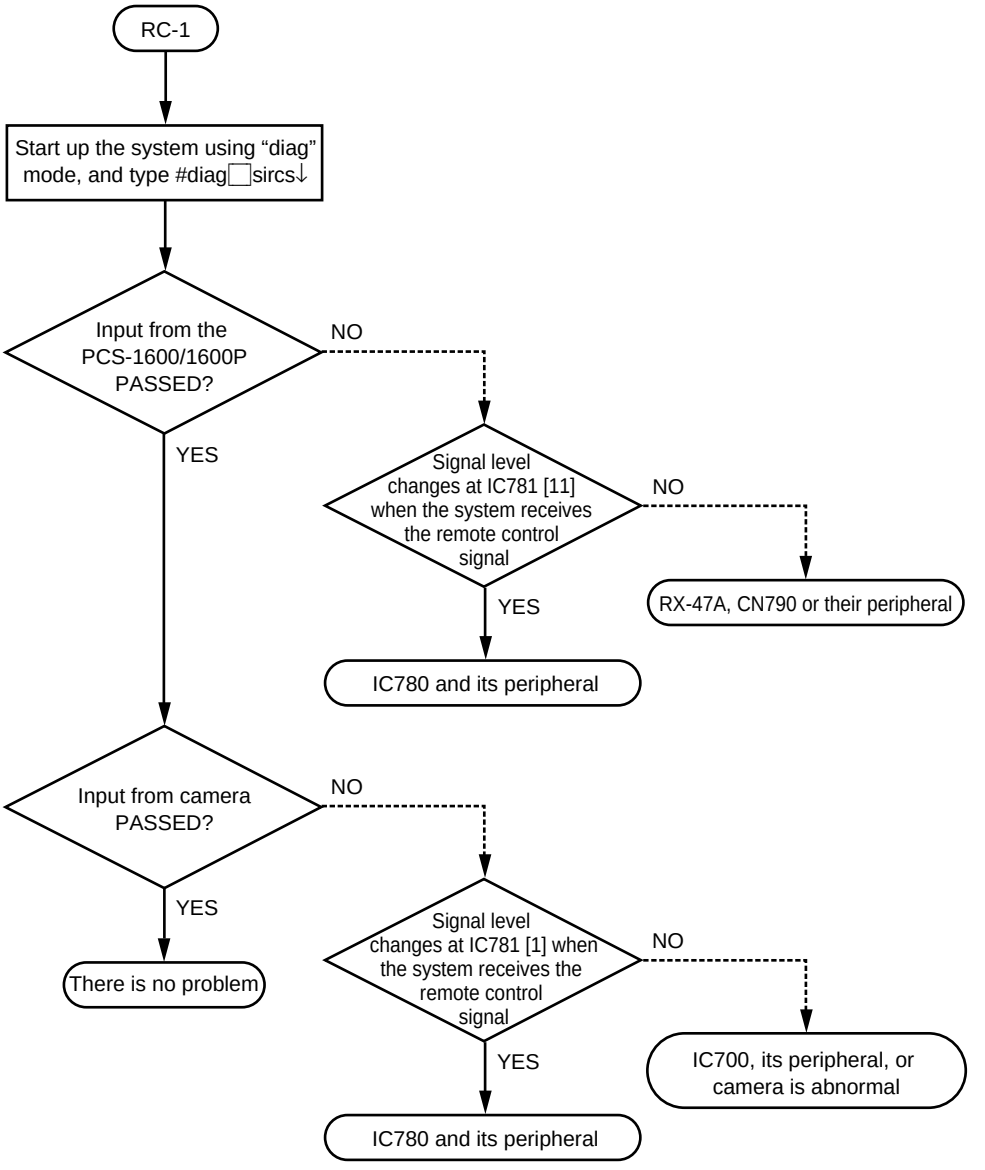

IF-824
#ww□a4000000□0↓
#ww□a4000002□0↓
#rw□b8100020↓
Lower order byte is “1E [HEX]”?
NO
YES
Host interface block is defective [Replace IC103, IC104, IC105]
V.35-1
Connect the V.35 cable to the IF-824 board and the network tool(*1). Start up the application
(*1) : Sony Part Number : J-6387-400-B
>pass□if_mgr↓
>loop□l↓
(Local loop setting)
Set the Dial setup (4/4) RS-366 to OFF and set the Mauul Dial line I/F to V.35, and dial up
Picture of the local station is displayed on monitor , and voice of the local station is heard
NO
YES
Circuit is cut
V.35-3
V.35-2


V.35-1
#ww□a4000000□0↓
#ww□a4000002□0↓
#ww□b8100010□aa↓
#ww□b8100010□55↓
Confirm that the registers can be re-writable by performing the above described commands. If the registers are not re-writable, replace IC105
#ww□b8100010□ff↓
Next, check the LED indicator on the front panel using the network tool (*1)
(*1) : Sony Part Number : J-6387-400-B
LED indicators of ER and RS turn on?
NO
YES
Transceiver block is defective [Replace IC200 and C210 to C214] [Replace FL210 and FL211]
V.35-1
LED indicators of CRQ and DPR turn on?
NO
YES
Transceiver block is defective [Replace IC201 and C215 to C219] [Replace FL217 and FL218]
V.35-1
V.35-4
V.35-2
>pass□if_mgr↓
>loop□off↓
Move up both pin 1 and 2 of V.35 DIP switch on rear side of network tool (Local loop setting)
Set the Dial setup (4/4) RS-366 to OFF and set the Mauul Dial line I/F to V.35, and dial up
Picture of the local station is displayed on monitor and voice of the local station is also heard?
NO
YES
EMI filter is defective [Replace the FL200 to FL209] Or, IC101 and its peripheral
V.35-2
Repair of the data and timing systems is complete


V.35-3
Voltage at IC100 [5] is −5V?
NO
YES
Transceiver block (V.35) is defective
[Replace IC101 and IC102]
Voltage converter block is defective
[Replace IC100, C100, C110]
V.35-1
V.35-3


V.35-4
Connect the IF-824 board and the terminal adapter using the V.35 cable and start up the application
Set the Dial setup (4/4) RS-366 to OFF and set the Mauual Dial Line I/F to V.35, enter the loop back number of the telecommunication company to A1 of the dial list, and dial up
Picture of the local station is displayed on monitor, and voice of the local station is heardat the local station?
NO
YES
Transceiver block is defective
[Replace IC202 and C220 to C224]
[Replace IC203 and C225 to C229]
[Replace FL219 and FL220 to FL223]
Repair of the control signal system is complete
V.35-4


IR-1
#diag□sircs□send↓
When the IR repeater is directed toward the camera, emission can be checked?
NO
YES
The remote control unit turns on when the IR repeater is replaced
NO
IC780 and its peripheral
YES
TV can be controlled?
NO
IC780 and its peripheral
YES
IR repeater has no problem


RC-1
Start up the system using “diag” mode, and type #diag□sircs↓
Input from the PCS-1600/1600P PASSED?
NO
YES
Signal level changes at IC781 [11] when the system receives the remote control signal
NO
YES
RX-47A, CN790 or their peripheral
IC780 and its peripheral
Input from camera PASSED?
NO
YES
There is no problem
Signal level changes at IC781 [1] when the system receives the remote control signal
NO
YES
IC700, its peripheral, or camera is abnormal
IC780 and its peripheral

4-2-3. When Self-diagnostics Results in FAIL

- HOST PLD A-1
- HOST BUS A-2
- SH-4 RTC A-3
- POWER CONTROL A-4
- CAMERA CONTROL A-5
- BRI A-6
- VCP SRAM A-7
- VIDEO A-8
- INTERRUET A-9
- ETHERNET A-10
- SIRCS A-11
- LED A-12

Notes

- When self-diagnostics results in FAIL, input the following commands again after repair is complete.:
  #diag□auto↓
  Then, confirm that the system passes all the diagnostics items.
- To diagnose A-x of this list individually, refer to the subsequent page.

http://getMANUAL.com

Diagnostics command (∗1)	Diagnostics command (∗2)	Locations to be diagnosed
auto	hostpld (A-1)	Host PLD (IC110 and its peripheral)
	hostbus (A-2)	SH-CPU bus of the 5V, 3.3V-2 block
	rtc (A-3)	Built-in real time clock of SH-4
	power (A-4)	Power ON/OFFdiagnostics of the stand-by power supply area
	camera (A-5)	Camera control block
	bri (A-6)	BRI block
	vcpram (A-7)	SRAM test of VCP (IC300)
	video (A-8)	Video encoder, decoder, VCP, VIA, VOA
	ethernet(A-9)	Precise diagnostic of ethernet block
	interrupt (A-10)	Diagnostics of the interrupt signal lines
	sircs (A-11)	Diagnostic of SIRCS receiver block
	led (A-12)	Diagnostic of the POWER and STANDBY LED indicators
	videoblock(A-8)	Precise diagnostic of video block
	vcpcolor (∗3)	VCP Color bar output
	audio	Diagnostic of the audio block audio□digital↓ : diagnostics of digital part audio□analog□[0,1,3,4]↓ : diagnostics of analog part **Note** When you want to perform this diagnostics, the video block must have been completed in advance
	irout	Diagnostic of SIRCS transmitter block
	if-823	Diagnostics of the BRI control and memory of the IF-823 board

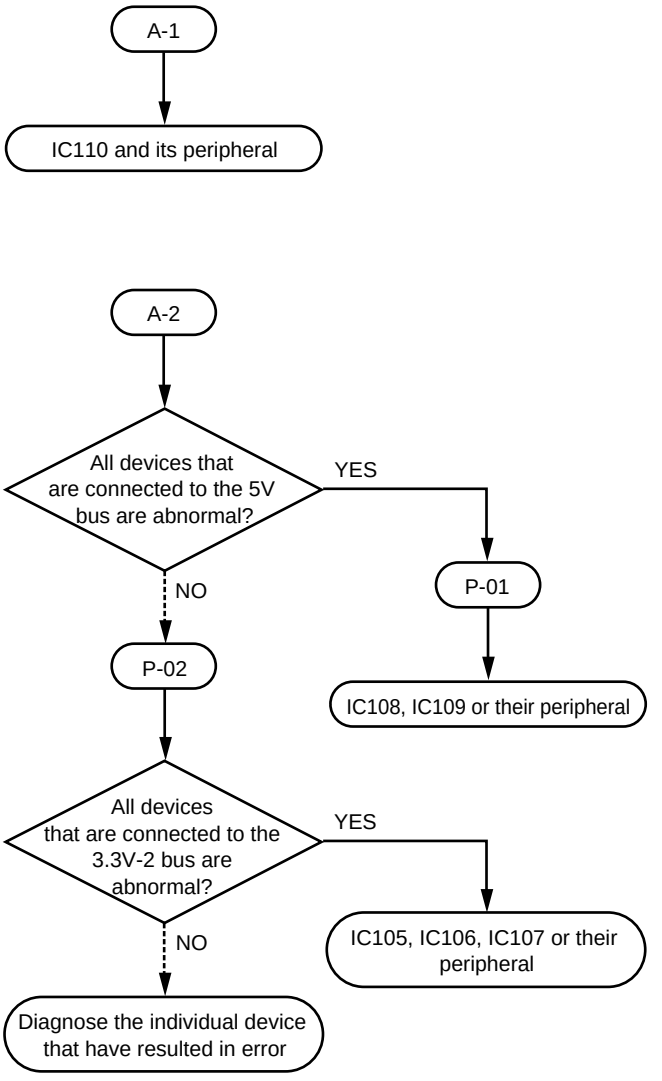
(∗1) : The commands of this column execute continuously the commands that are shown in the right column.
(∗2) : The flowchart indexes that are shown in parenthesis () show the commands that are used to diagnose the flowchart A-x again.
(∗3) : The VCP Color command can be used during stopper or finished the Video block diagnostics abter VCP has been downloaded, but it cannot be used during VPC does not started up normally.

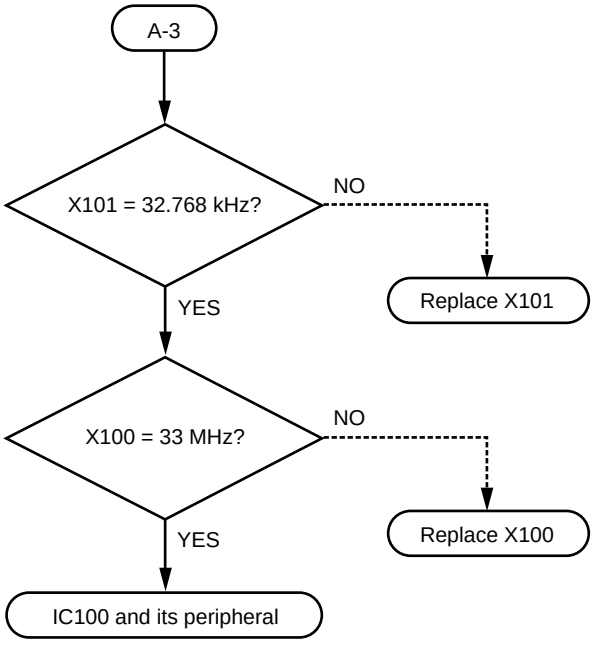
Note

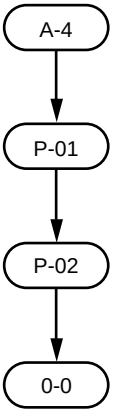
- Before using these self-diagnostics commands, inputting the following entries is required in order to prepare to use the self-diagnostics software.
  # loadmodule□f00000↓
- The commands that are listed above can be used independently but they may not work correctly depending on the setting or trouble conditions. To diagnose the troubles without fail, enter "#diag□auto↓", confirm that the system passes all the tests and perform diagnostics individually.

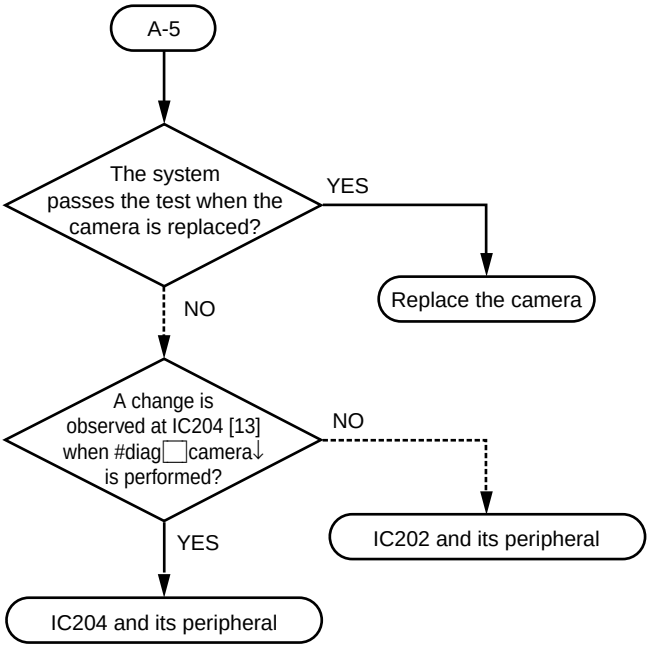
Example of using the command:

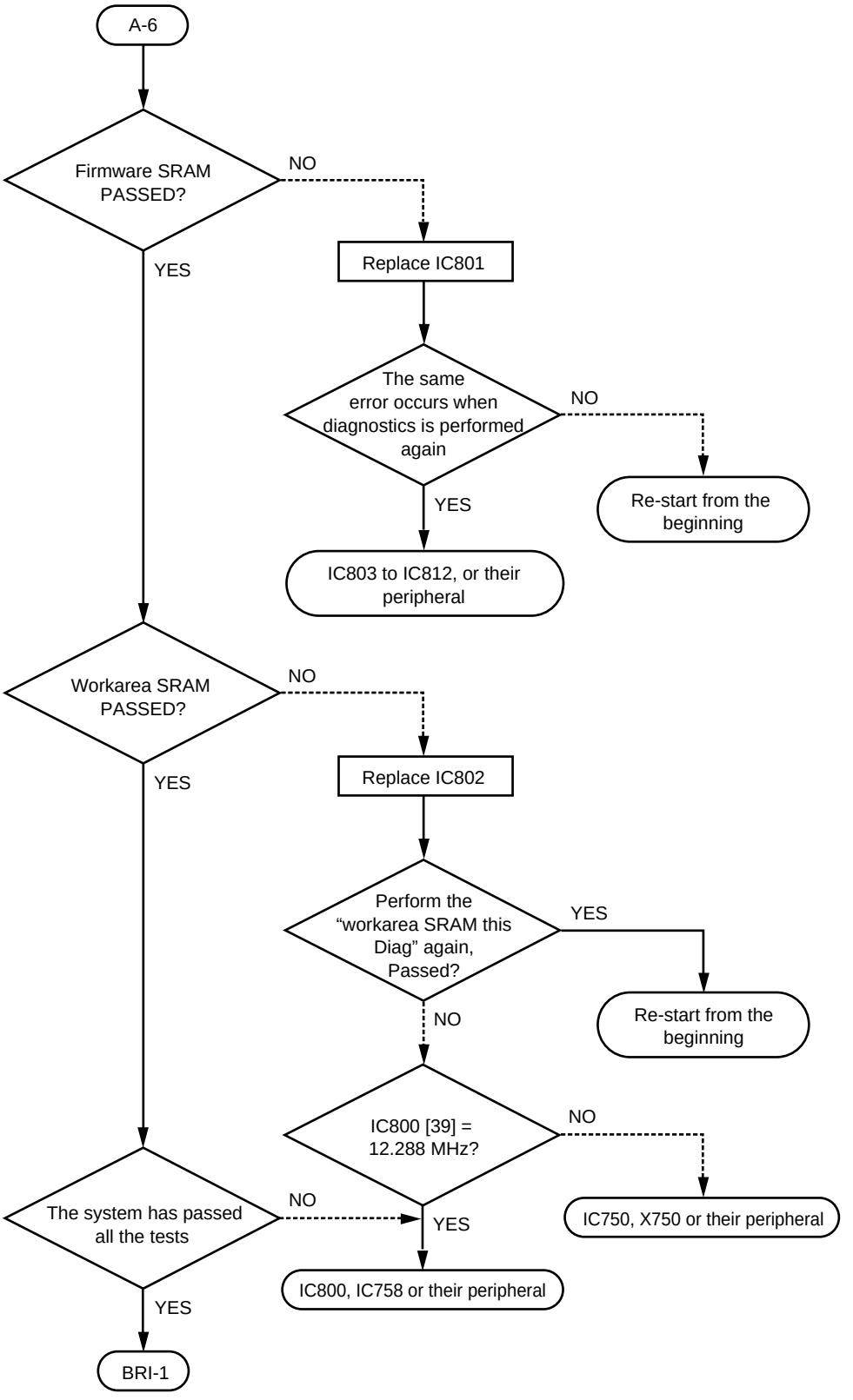
loadmodule □f00000↓
diag□video↓
#diag□audio□digital↓
#diag□auto↓

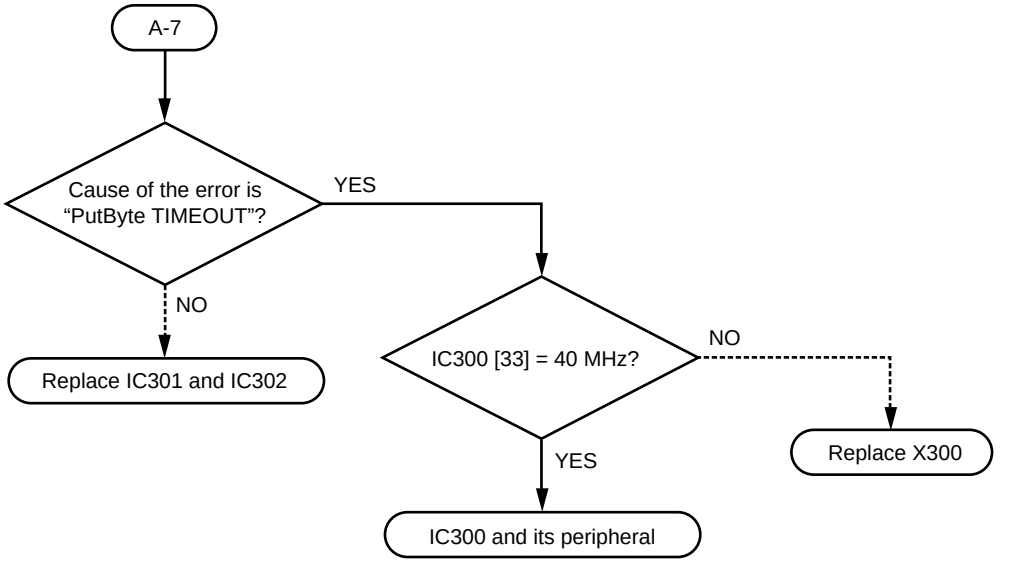

A-1
IC110 and its peripheral
A-2
All devices that are connected to the 5V bus are abnormal?
YES
NO
P-01
IC108, IC109 or their peripheral
P-02
All devices that are connected to the 3.3V-2 bus are abnormal?
YES
NO
IC105, IC106, IC107 or their peripheral
Diagnose the individual device that have resulted in error

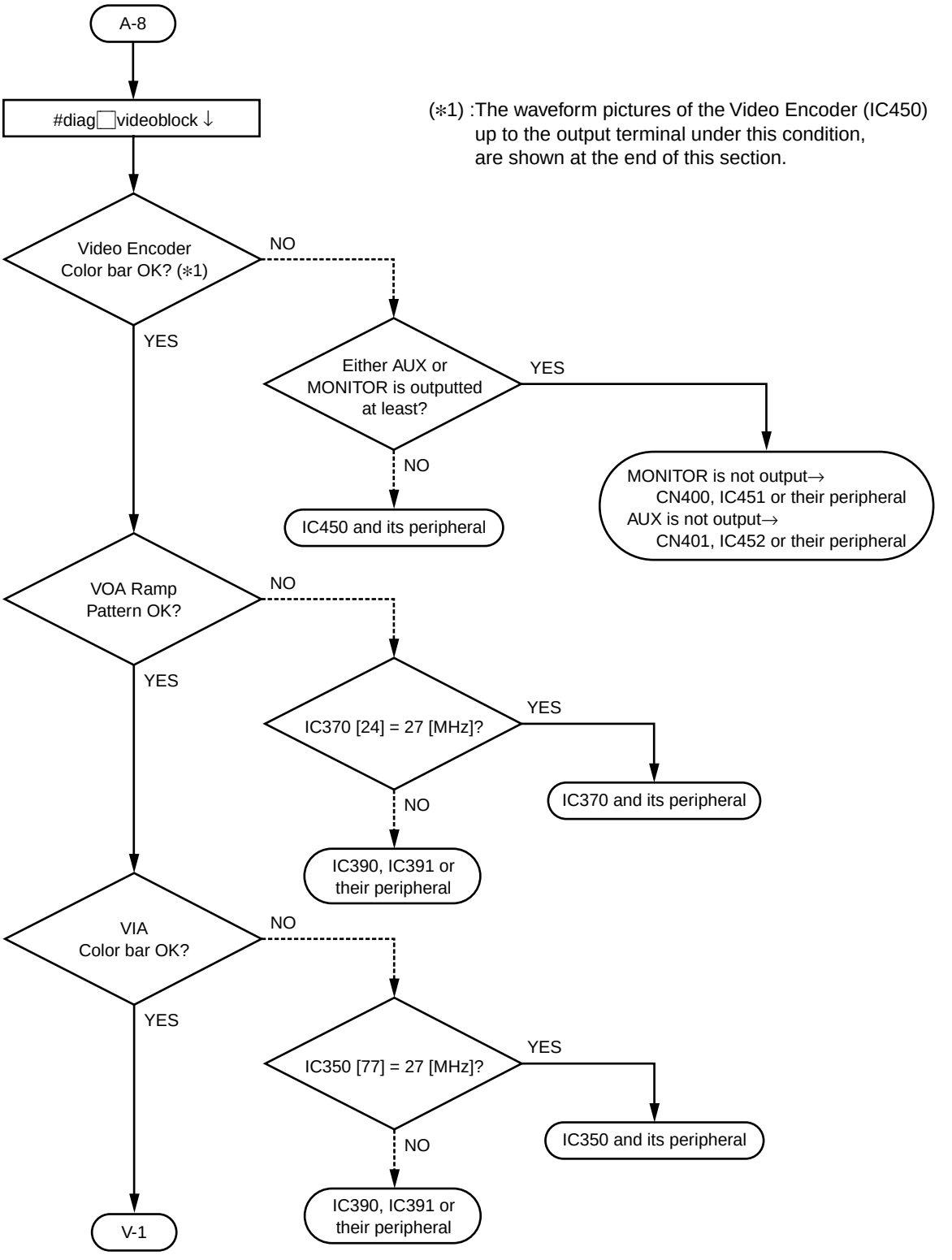

A-3
X101 = 32.768 kHz?
NO
Replace X101
YES
X100 = 33 MHz?
NO
Replace X100
YES
IC100 and its peripheral


A-4
P-01
P-02
0-0


A-5
The system passes the test when the camera is replaced?
YES
Replace the camera
NO
A change is observed at IC204 [13] when #diag□camera↓ is performed?
NO
IC202 and its peripheral
YES
IC204 and its peripheral


A-6
Firmware SRAM PASSED?
NO
YES
Replace IC801
The same error occurs when diagnostics is performed again
NO
YES
Re-start from the beginning
IC803 to IC812, or their peripheral
Workarea SRAM PASSED?
NO
YES
Replace IC802
Perform the “workarea SRAM this Diag” again, Passed?
YES
NO
Re-start from the beginning
IC800 [39] = 12.288 MHz?
NO
YES
IC750, X750 or their peripheral
IC800, IC758 or their peripheral
The system has passed all the tests
NO
YES
BRI-1

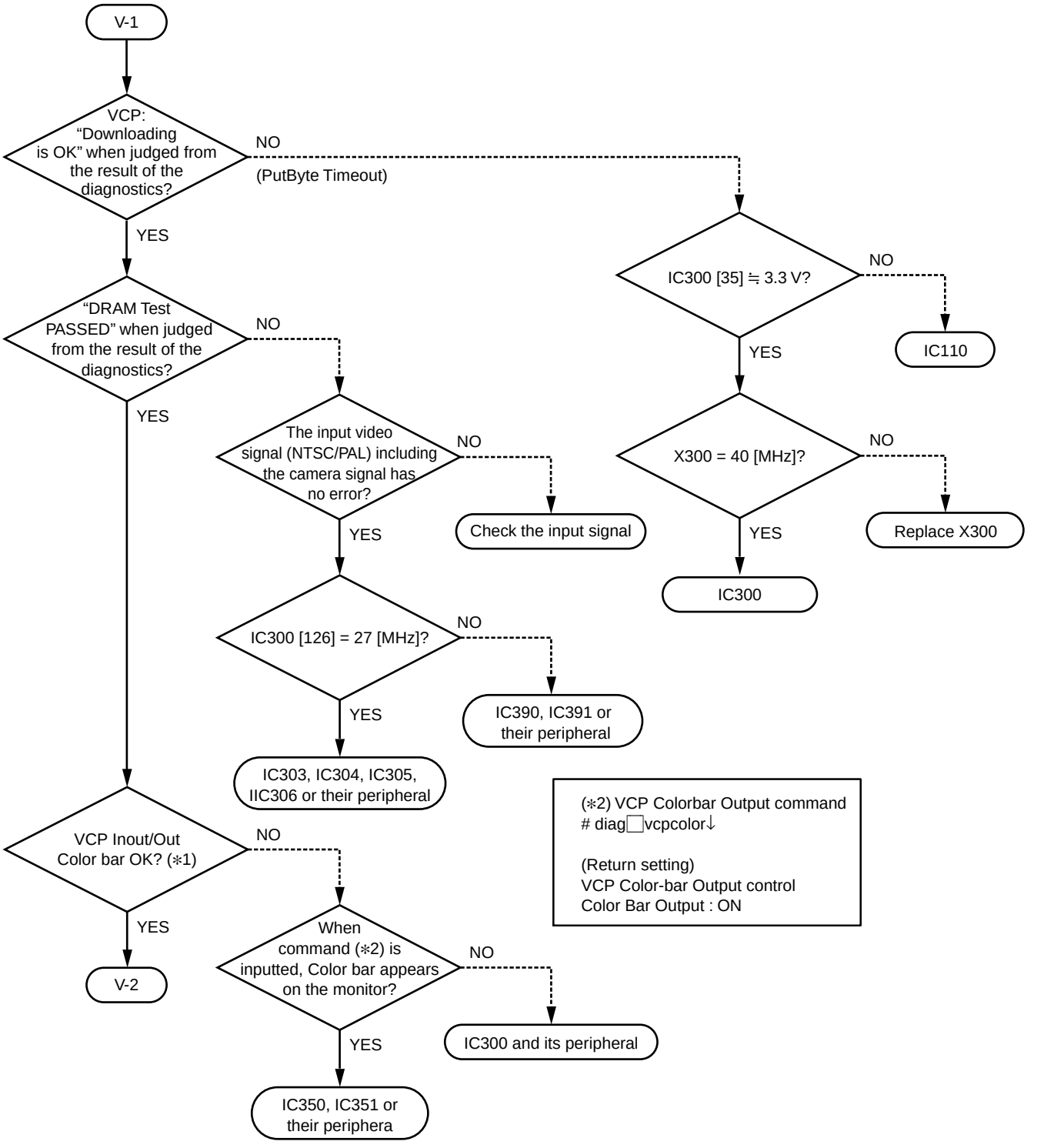

A-7
Cause of the error is
“PutByte TIMEOUT”?
YES
NO
Replace IC301 and IC302
IC300 [33] = 40 MHz?
NO
YES
Replace X300
IC300 and its peripheral



(∗1) :The waveform pictures of the Video Encoder (IC450) up to the output terminal under this condition, are shown at the end of this section.

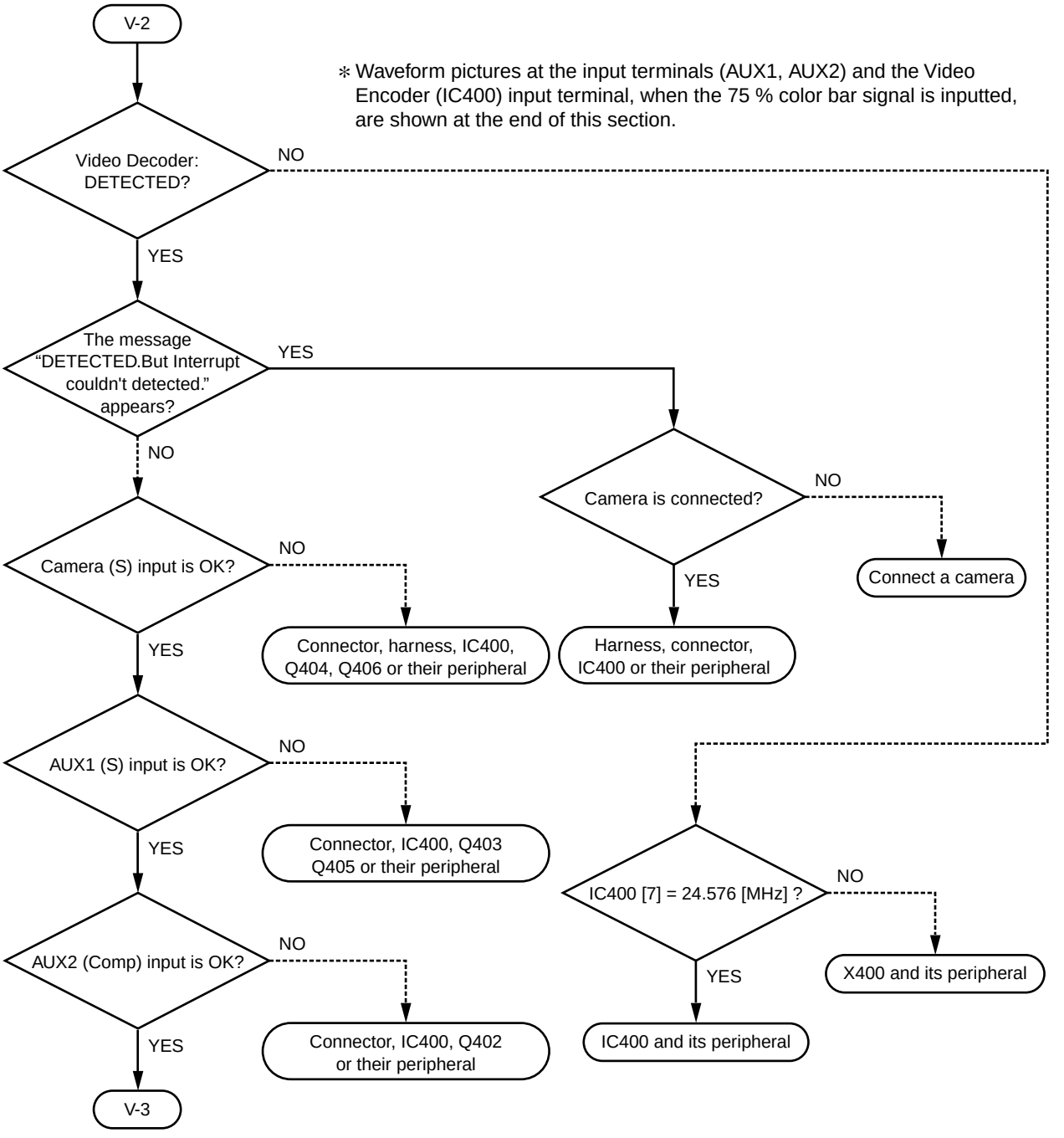
Note

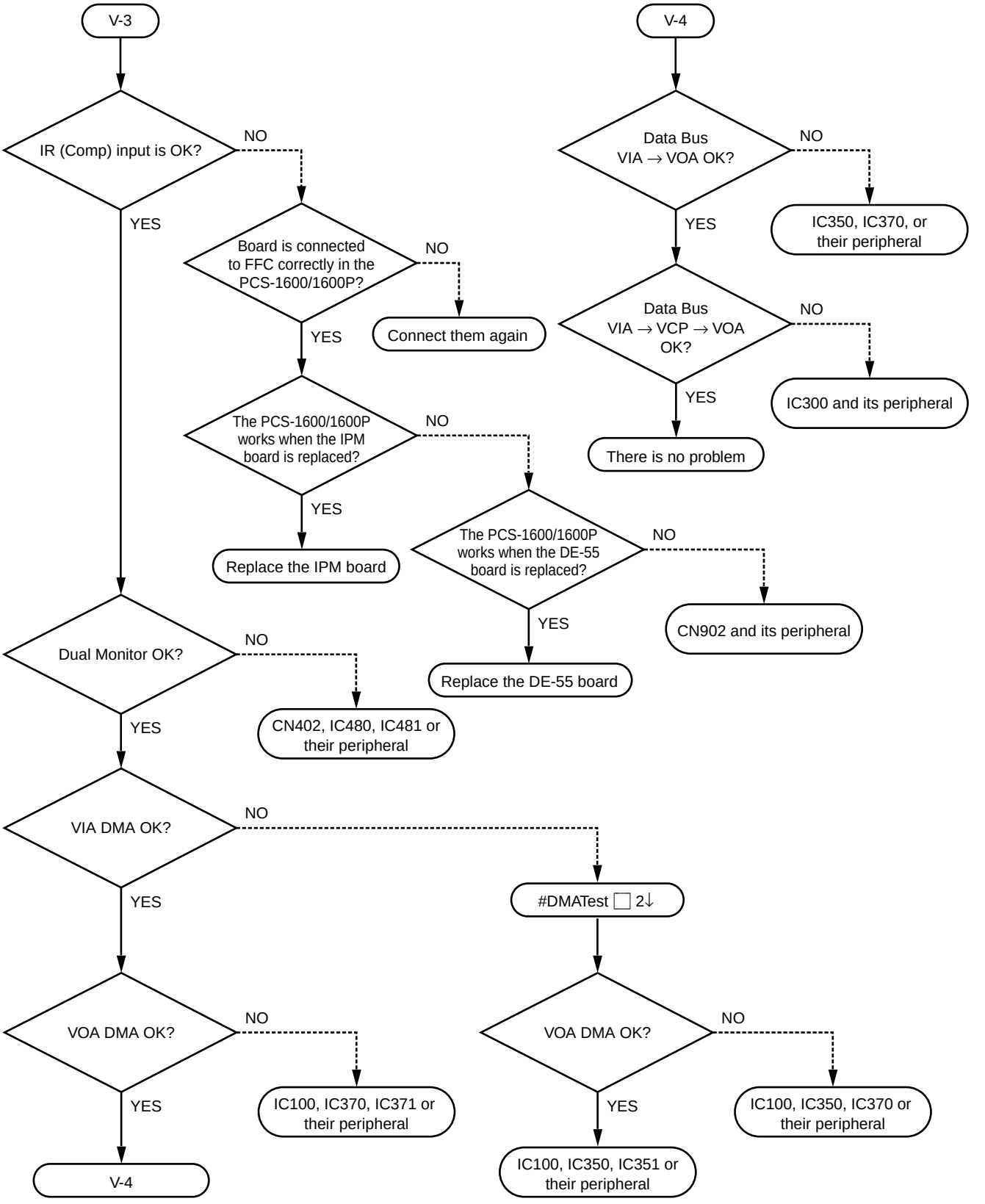
- When entirely no pictures are outputted from the video system block, the +10 V power supply may be defective.
  IC904 and its peripheral supply the +10 V power.Confirm that the +10 V power is supplied to the devices following the circuit diagram.



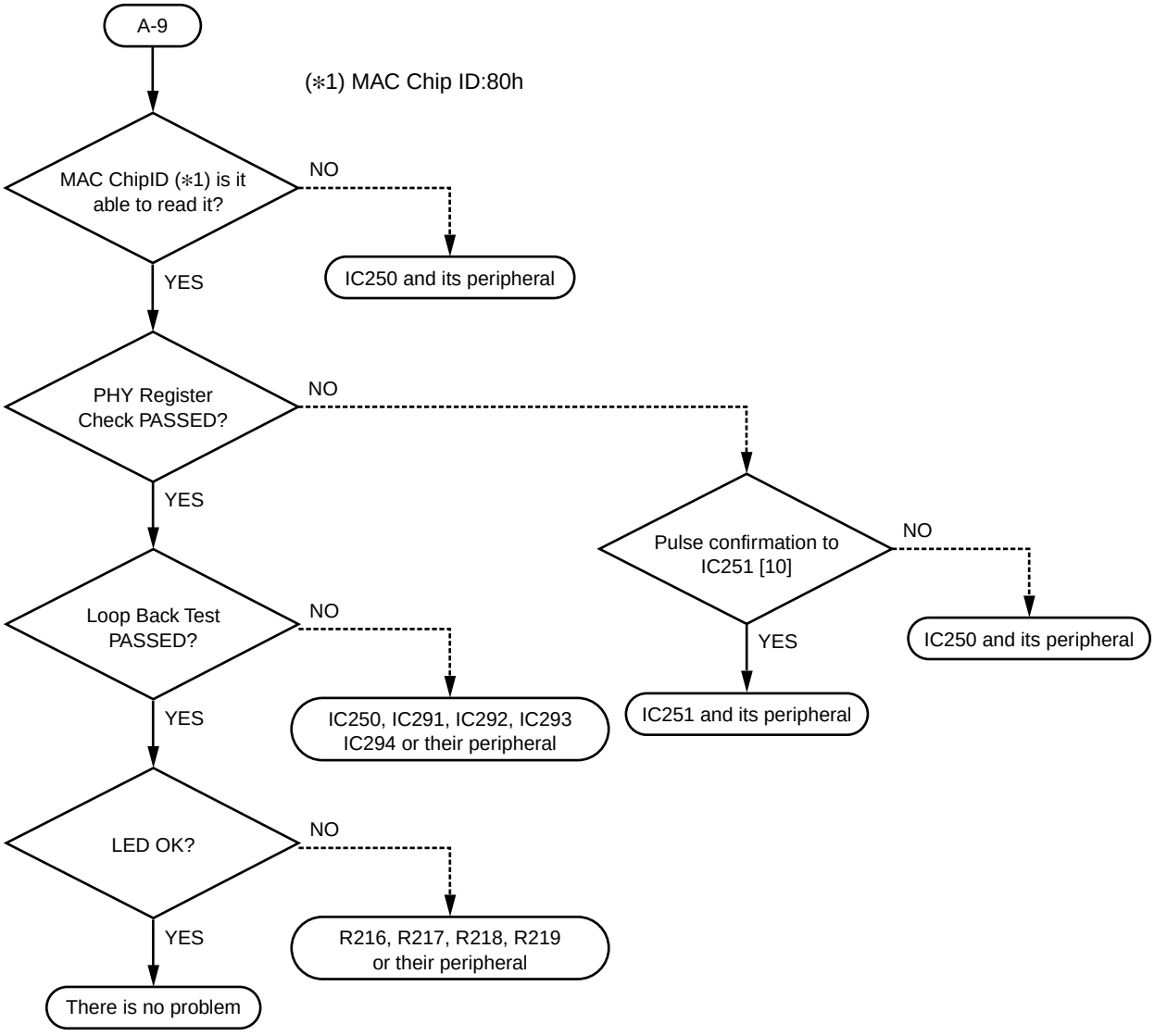
Note

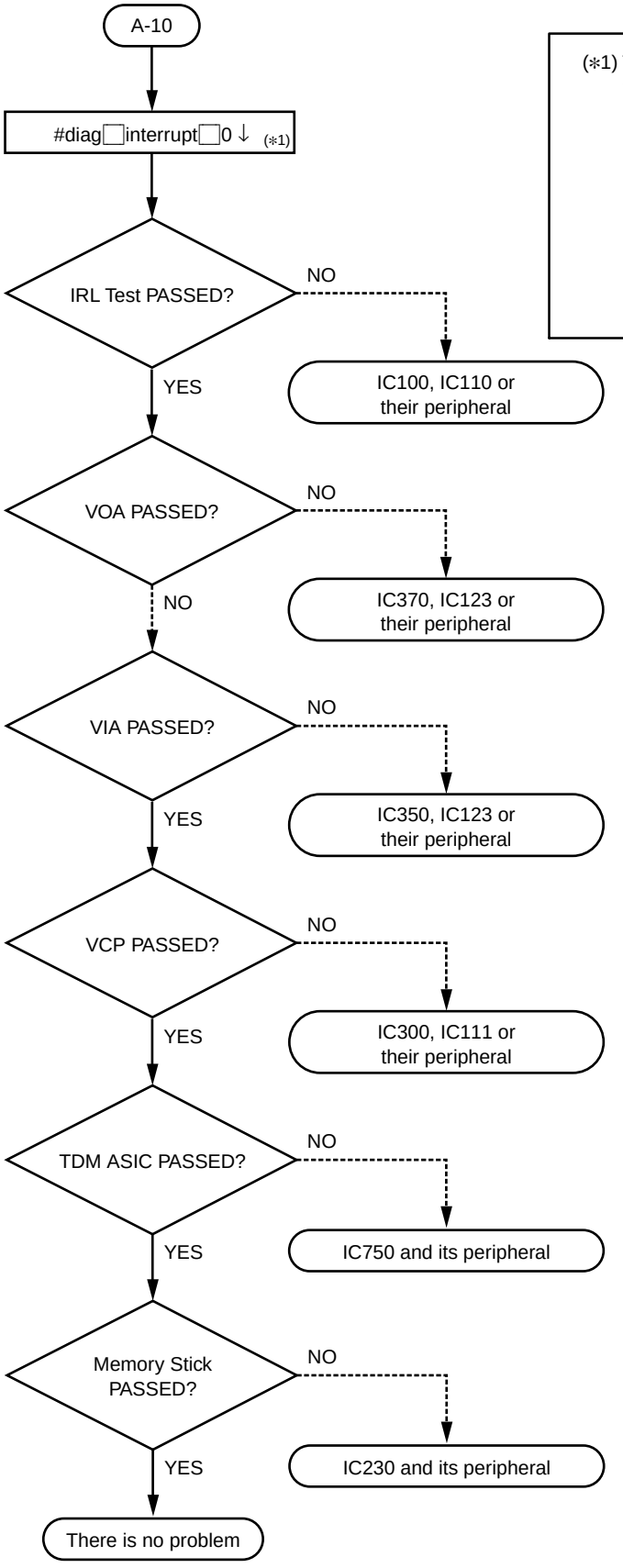
- When an error occurs during the DRAM test of VCP, the DRAM may be defective, or the clock (27 MHz, V-Sync...) of the video system may be not input correctly.
- When the application does not work even though the system has PASSED self-diagnostics, a trouble may be existing inside the VCP. Replace the VCP (IC300).
- The VCP Color command (∗2) can be used during stopper or finished the Video block diagnostics abter VCP has been downloaded, but it cannot be used during VPC does not started up noermally.


V-2
∗ Waveform pictures at the input terminals (AUX1, AUX2) and the Video Encoder (IC400) input terminal, when the 75 % color bar signal is inputted, are shown at the end of this section.
Video Decoder: DETECTED?
NO
YES
The message "DETECTED.But Interrupt couldn't detected." appears?
YES
NO
Camera is connected?
NO
Connect a camera
YES
Harness, connector, IC400 or their peripheral
Camera (S) input is OK?
NO
Connector, harness, IC400, Q404, Q406 or their peripheral
YES
AUX1 (S) input is OK?
NO
Connector, IC400, Q403 Q405 or their peripheral
YES
IC400 [7] = 24.576 [MHz] ?
NO
X400 and its peripheral
YES
IC400 and its peripheral
AUX2 (Comp) input is OK?
NO
Connector, IC400, Q402 or their peripheral
YES
V-3


V-3
IR (Comp) input is OK?
NO
YES
Board is connected to FFC correctly in the PCS-1600/1600P?
NO
Connect them again
YES
The PCS-1600/1600P works when the IPM board is replaced?
NO
YES
Replace the IPM board
The PCS-1600/1600P works when the DE-55 board is replaced?
NO
YES
Replace the DE-55 board
CN902 and its peripheral
Dual Monitor OK?
NO
YES
CN402, IC480, IC481 or their peripheral
VIA DMA OK?
NO
YES
#DMATest □ 2↓
VOA DMA OK?
NO
YES
IC100, IC370, IC371 or their peripheral
V-4
VOA DMA OK?
NO
YES
IC100, IC350, IC351 or their peripheral
IC100, IC350, IC370 or their peripheral
V-4
Data Bus VIA → VOA OK?
NO
YES
IC350, IC370, or their peripheral
Data Bus VIA → VCP → VOA OK?
NO
YES
IC300 and its peripheral
There is no problem

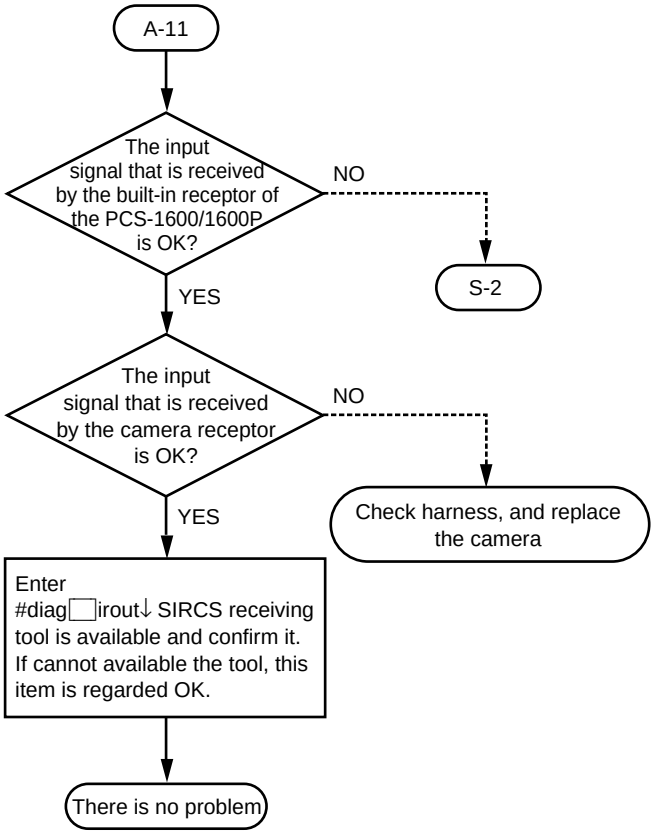
http://getMANUAL.com

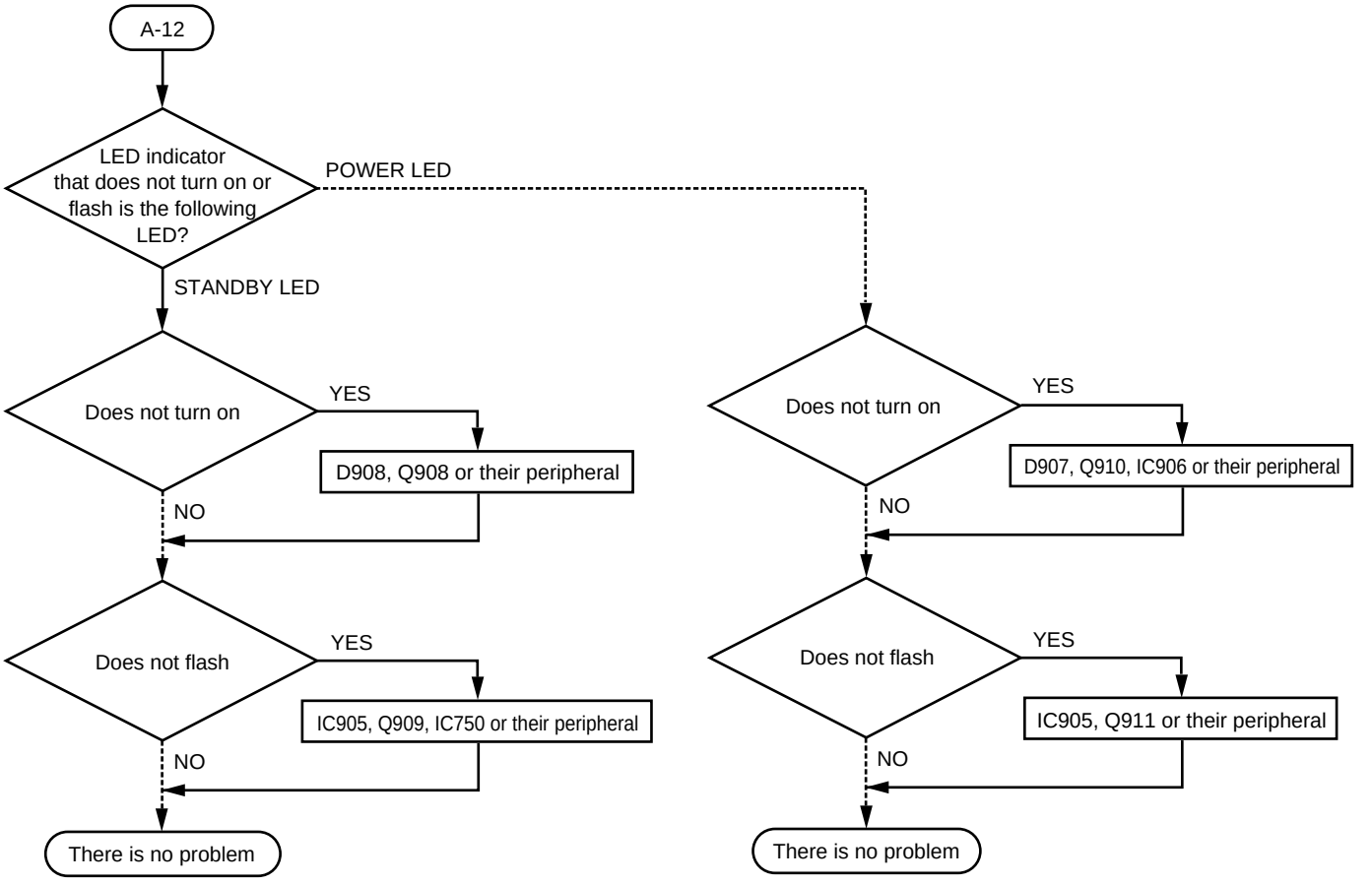




(*1) The diagnostic of interruption can be perfoemed with following option in every device.

#diag□interrupt□0↓ : ALL
#diag□interrupt□1↓ : IRL Test
#diag□interrupt□2↓ : VOA
#diag□interrupt□3↓ : VIA
#diag□interrupt□4↓ : VCP
#diag□interrupt□5↓ : TDM ASIC
#diag□interrupt□6↓ : Memory Stick


A-11
The input signal that is received by the built-in receptor of the PCS-1600/1600P is OK?
NO
S-2
YES
The input signal that is received by the camera receptor is OK?
NO
Check harness, and replace the camera
YES
Enter #diag□irout↓ SIRCS receiving tool is available and confirm it. If cannot available the tool, this item is regarded OK.
There is no problem


A-12
LED indicator that does not turn on or flash is the following LED?
POWER LED
STANDBY LED
Does not turn on
YES
D908, Q908 or their peripheral
NO
Does not flash
YES
IC905, Q909, IC750 or their peripheral
NO
There is no problem
Does not turn on
YES
D907, Q910, IC906 or their peripheral
NO
Does not flash
YES
IC905, Q911 or their peripheral
NO
There is no problem

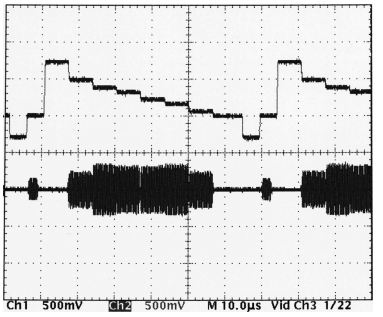
WAVE FORM

NTSC

Video Input (AUX1, AUX2, IC400)
- 75 % color bars

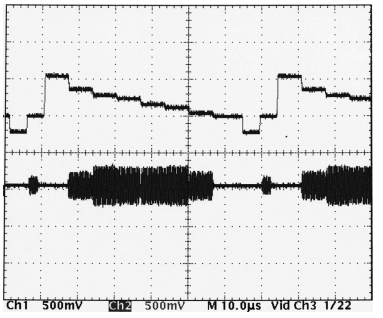
- CN400 [9, 10]

[9]
[10]

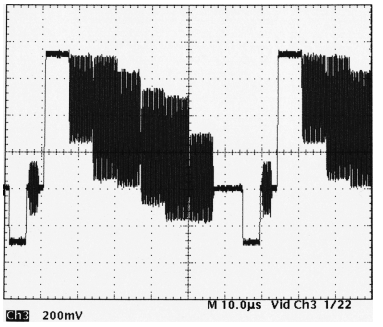


- IC400 [18, 14]

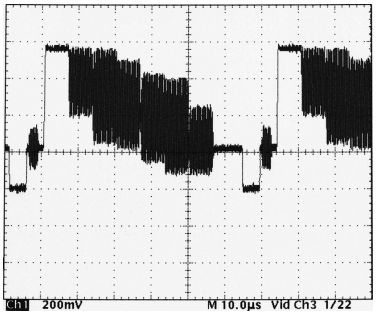
[18]
[14]



- CN401 [5]



- IC400 [12]

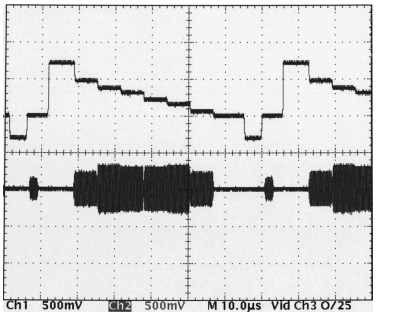


PAL

Video Input (AUX1, AUX2, IC400)
- 75 % color bars

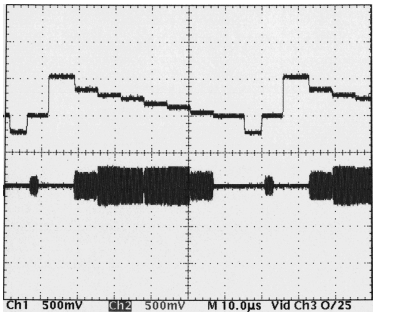
- CN400 [9, 10]

[9]
[10]

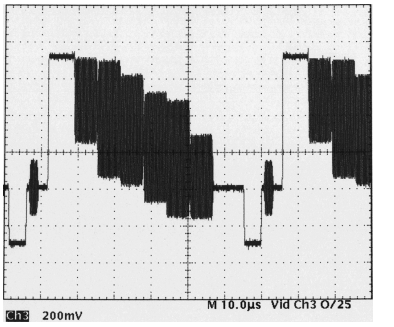


- IC400 [8, 14]

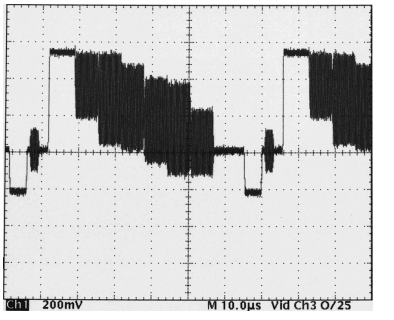
[8]
[14]



- CN401 [5]



- IC400 [12]

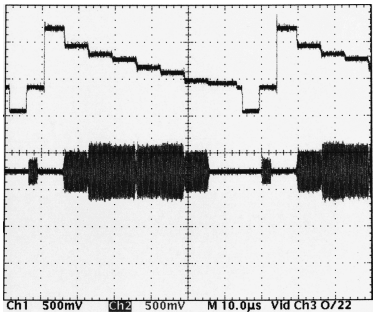


NTSC

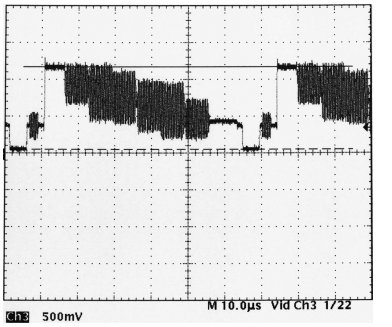
Video Input (IC450)
- 75 % color bars

- IC450 [51, 48]

[51]
[48]

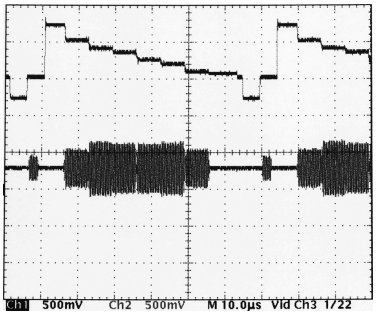


- IC450 [45]

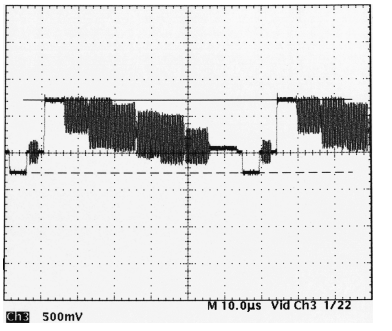


- Q451, Q453 [E]

[Q451]
[Q453]

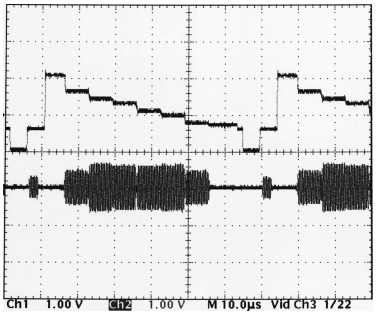


- Q455 [E]

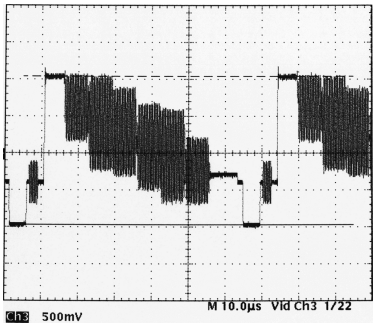


- CN400 [3, 4]

[3]
[4]



- CN401 [6]

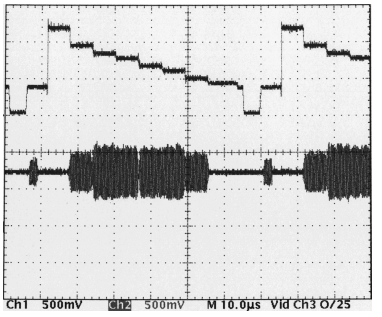


PAL

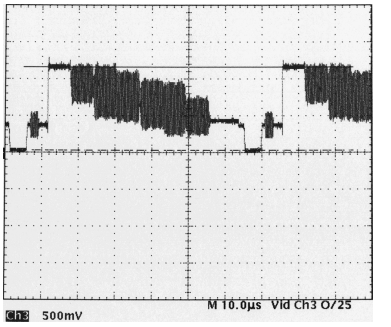
Video Output (IC450)
- 75 % color bars

- IC450 [51, 48]

[51]
[48]

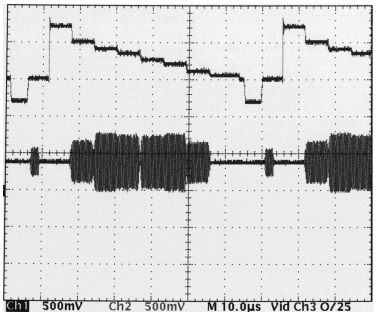


- IC450 [45]

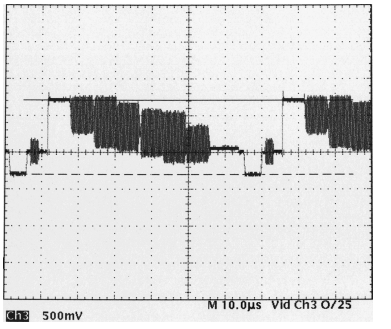


- Q451, Q453 [E]

[Q451]
[Q453]

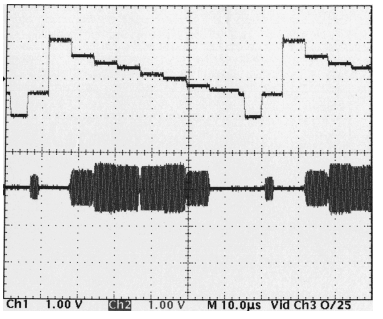


- Q455 [E]

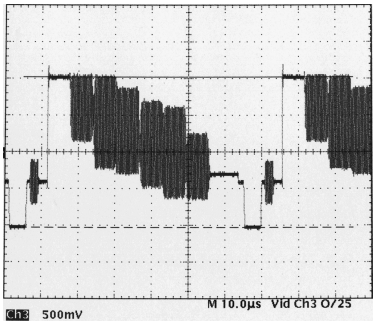


- CN400 [3, 4]

[3]
[4]



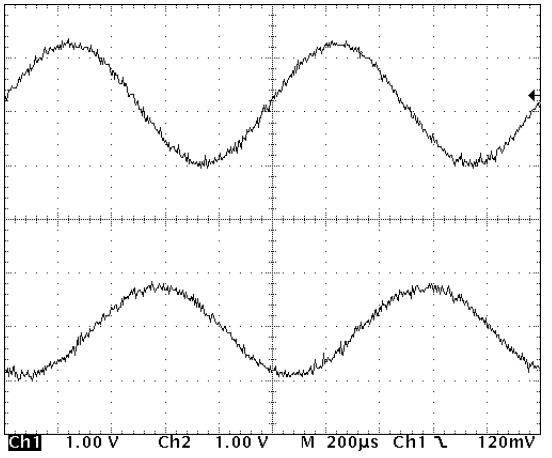
- CN401 [6]



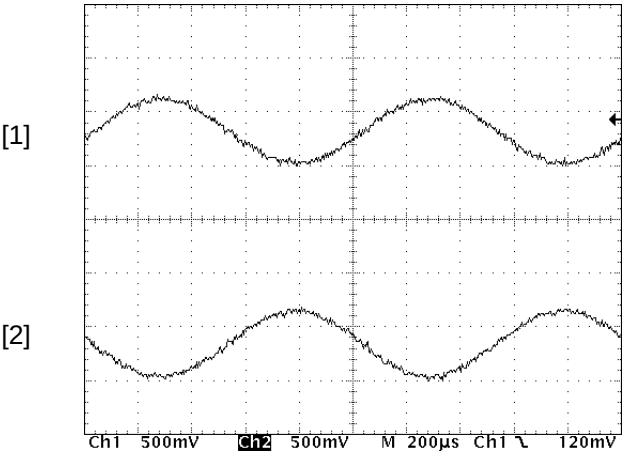
AUDIO

Input signal : CN401 [2] 1kHz, 0dB, Sine wave

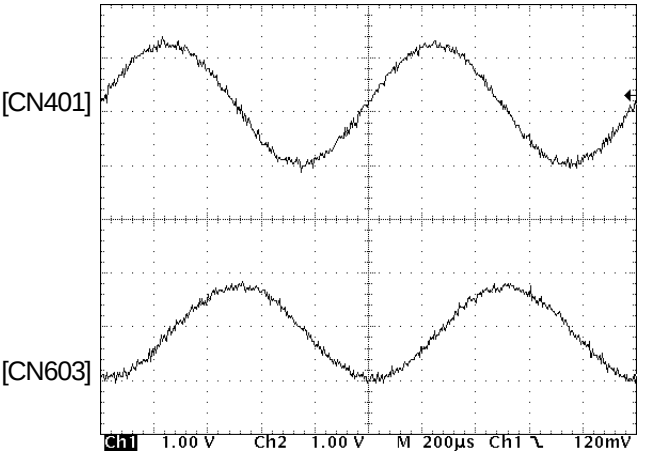
• CN401 [2, 3]



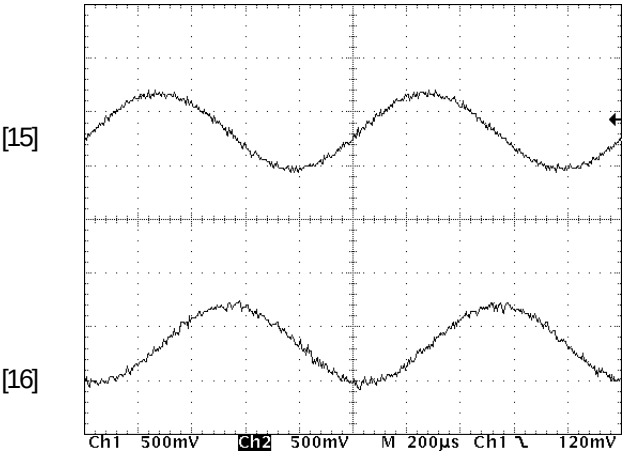
• CN602 [1, 2]



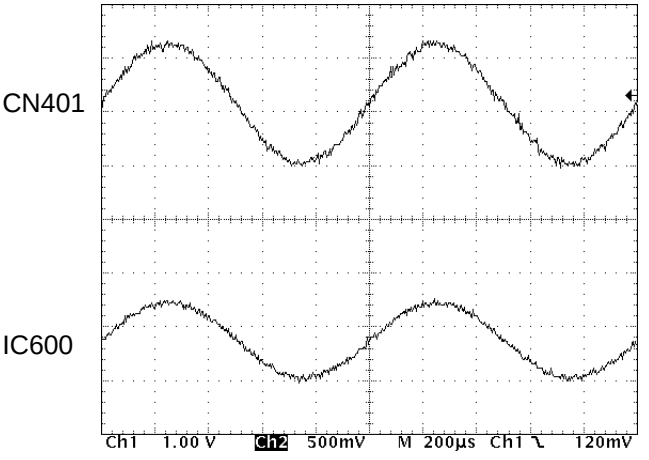
• CN401 [2], CN603 [1]



• IC600 [15,16]

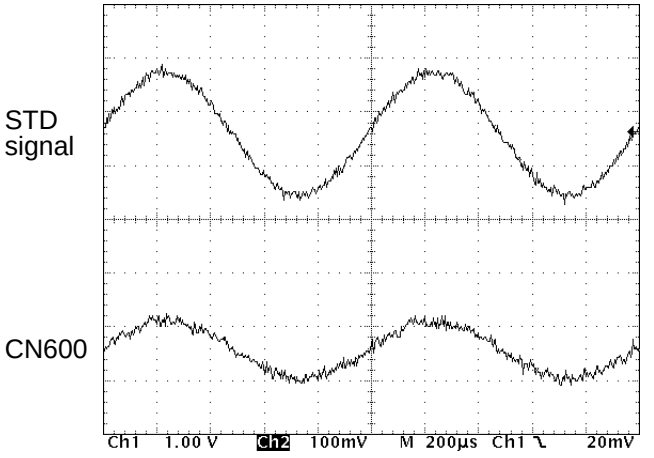


• CN401 [2], IC600 [2]

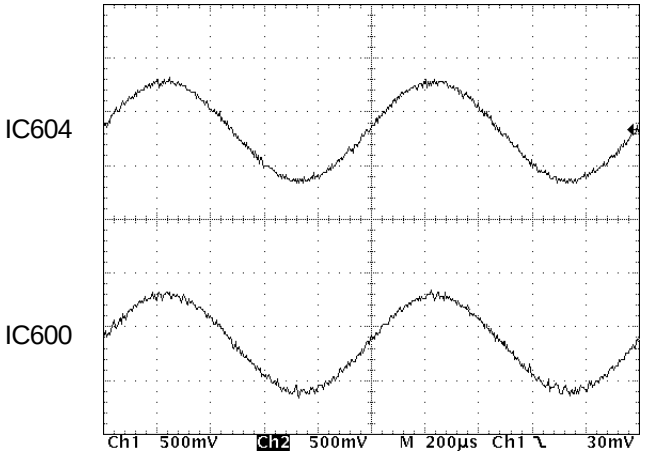


STD signal qenerator 100kΩ CN600 (1 or 4)

• STD signal, CN600 [1 or 4]

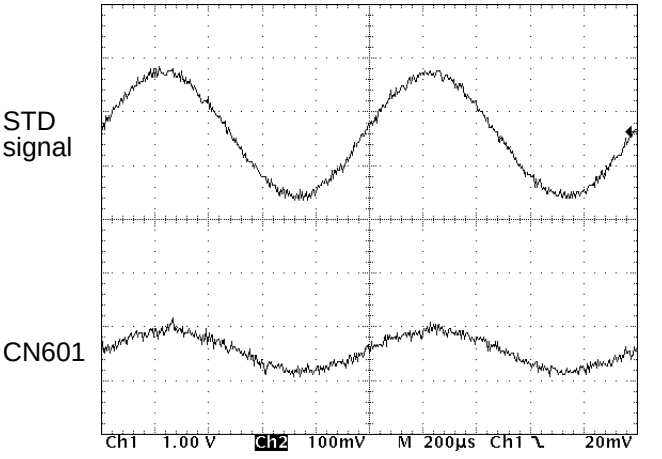


• IC604 [3], IC600 [3]

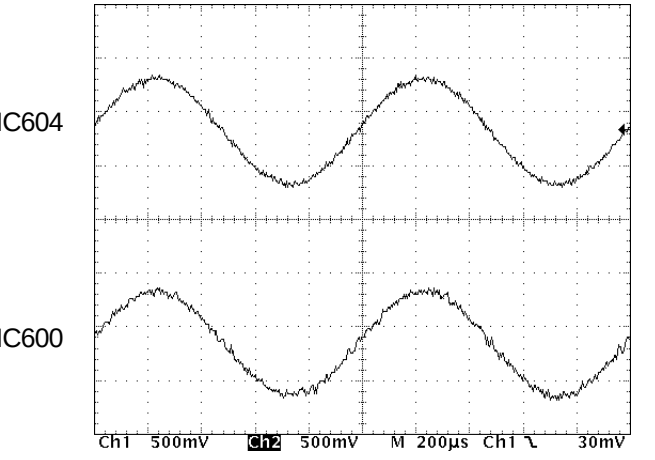


STD signal qenerator 390kΩ CN601 (2)

• STD signal, CN601 [2]



• IC604 [1], IC600 [3]



PCS-1600 (UC)
PCS-1600P (CE) E
9-955-262-11

Sony Corporation
Communication System Solutions Network Company

Printed in Japan
2001. 1 26
©2001